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SEVENTY-SIXTH ANNUAL REPORT

OF THE

SUPERINTENDENT OF PUBLIC INSTRUCTION

OF THE

STATE OF MICHIGAN

WITH

ACCOMPANYING DOCUMENTS

FOR

THE YEAR 1912-1913

BY AUTHORITY

LANSING, MICHIGAN
WYNKOOP HALLENBECK CRAWFORD CO., STATE PRINTERS
1913

LETTER OF TRANSMITTAL

STATE OF MICHIGAN,
DEPARTMENT OF PUBLIC INSTRUCTION,
Lansing, June 30, 1913.

To His Excellency, WOODBRIDGE N. FERRIS,
Governor of the State of Michigan:

SIR—In compliance with the provisions of law, I have the honor herewith to transmit through you to the Legislature, the annual report of the Superintendent of Public Instruction, together with the accompany-documents, for the year ending June 30, 1913.

Very respectfully,
Your obedient servant,

L. L. Wright

Superintendent of Public Instruction.

262096

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STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

1913.

LUTHER L. WRIGHT	State Superintendent.
FRED L. KEELER	Deputy Superintendent.
ETTA H. GARDINE	Chief Clerk.
SARAH M. NICHOLSON	County Normal Supervisor.
G. S. LASHER	Auditor.
GRACE B. WALLACE	Chief Statistician.
J. W. HAZARD	Assistant Statistician.
CHRISTINA M. MACDONALD	Assistant Statistician.
FLORENCE HIGGINS	Assistant Statistician.
MANIE B. LARSON	Librarian.
HELEN GENEVIEVE MEST	Stenographer.
VERA M. NORRIS	Stenographer.
IDA M. HUSTON	Editor.
SAMUEL F. POLOZKER	Shipping Clerk.
JOHN G. BOHNETT	Janitor and Messenger.

STATE BOARD OF EDUCATION

1913.

DEXTER M. FERRY, JR.	President.
THOMAS W. NADAL	Vice-president.
WM. J. McKONE	Treasurer.
LUTHER L. WRIGHT	Secretary.

SUPERINTENDENTS OF PUBLIC INSTRUCTION

APPOINTED.	
JOHN D. PIERCE	1836–1841
FRANKLIN SAWYER, JR.	1841–1843
OLIVER C. COMSTOCK	1843–1845
IRA MAYHEW	1845–1849
FRANCIS W. SHEARMAN	1849–1851
ELECTED.	
FRANCIS W. SHEARMAN	1851–1855
IRA MAYHEW	1855–1859
JOHN M. GREGORY	1859–1865
ORAMEL HOSFORD	1865–1873
DANIEL B. BRIGGS	1873–1877
HORACE S. TARBELL	1877–1878
CORNELIUS A. GOWER	1878–1881
VARNUM B. COCHRAN	1881–1883
HERSCHEL R. GASS	1883–1885
THEODORE NELSON	1885–1887
JOSEPH ESTABROOK	1887–1891
FERRIS S. FITCH	1891–1893
HENRY R. PATTENGILL	1893–1897
JASON E. HAMMOND	1897–1901
DELOS FALL	1901–1905
PATRICK H. KELLEY	1905–1907
LUTHER L. WRIGHT	1907 ——

DEPUTY SUPERINTENDENTS OF PUBLIC INSTRUCTION

CORTLAND B. STEBBINS	1859–1878
WILLIAM L. SMITH	1878–1883
DAVID PARSONS	1883–1885
WILLIAM L. SMITH	1885–1885
W. F. CLARK*	1885–1891
HUGH BROWN	1891–1893
JASON E. HAMMOND	1893–1897
DANIEL E. McCLURE	1897–1901
‡WALTER H. FRENCH	1901–1908
F. L. KEELER	1908 ——

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*In place of W. L. Smith, resigned.

‡Resigned July 1, 1908.

SUPERINTENDENT'S REPORT

This is the seventy-sixth annual report of the Superintendent of Public Instruction, and is a record of the work of public education in Michigan for the year ending June 30, 1913. The bulletins published during the year are included in this volume. The statistical tables herein given cover the school year, 1911-1912.

The educational outlook in Michigan is encouraging. Progression is indicated in various lines. The tendency is toward a school system which shall exist for the majority. Practical training in the work of the grades is becoming more widespread. Especial emphasis is being placed upon reading, spelling, writing, common-sense arithmetic and oral language work. The need of a more practical high school course of study is being recognized by both local authorities and those in higher institutions. The specializing along one industrial line by the state normal schools must increase efficiency. The plan of designating rural schools which meet certain requirements as *Standard Schools* will tend to improve rural school conditions in general. The appointment of an Assistant Superintendent of Public Instruction who shall be a rural school superintendent will assist in this. The effect of the amendment relating to the distribution of primary money has been to improve conditions. A marked decrease in the number of districts forfeiting is noted. Teachers' salaries have been increased and additional teachers employed. County normal classes have this year added to the teaching force of rural schools 638 teachers, making a total of 5,245 teachers graduated since the establishment of the first classes ten years ago. There is a growing interest in better school buildings, improved ventilation, lighting, heating, seating and other sanitary conditions, and in the improving and beautifying of school grounds and surroundings. The effectiveness of the educational system should be increased by certain laws enacted by the legislature of 1913.

The following publications have been prepared and issued by the Department and distributed to the commissioners, teachers and school patrons:

(a) Bulletin No. 1, County normals.
(b) Bulletin No. 3, Examination questions for 1912.
(c) Bulletin No. 6, History teaching (reprint).
(d) Bulletin No. 8, Township unit system (reprint).
(e) Bulletin No. 16, Examination regulations.
(f) Bulletin No. 23, School legislation of 1913.
(g) Bulletin No. 37, Common Michigan birds (reprint).
(h) Bulletin No. 45, Third grade arithmetic.
(i) Bulletin No. 46, Fourth grade arithmetic.

(j) Bulletin No. 47, Fifth grade arithmetic.
(k) Bulletin No. 48, Sixth grade arithmetic.
(l) Bulletin No. 49, Language outline.
(m) Bulletin No. 51, Planting plans for school grounds.
(n) Circular No. 11, Legally qualified teachers.
(o) Circular No. 13, Free tuition law.
(p) Circular No. 18, Textbook law.
(q) Library list.
(r) Press sheets containing items of educational interest sent to editors throughout the state.

SUMMARY OF STATISTICS FOR THE YEAR ENDING JUNE 30, 1912

1. School Census	795,448
2. Total Enrollment	555,137
3. Enrollment in Graded Schools	344,730
4. Enrollment in Ungraded Schools	210,407
5. Percentage of Attendance	76
6. Total Number of Teachers	18,824
7. Number Employed in Graded Schools	10,107
8. Number Employed in Ungraded Schools	8,717
9. Total Teachers' Wages	$9,952,326 67
10. Average Wages of Men per Month	82 33
11. Average Wages of Women per Month	54 97
12. Non-resident Tuition	266,146 94
13. Average Number of Months School in Graded and City Districts	9.4
14. Average Number of Months in Ungraded Districts	8.5
15. Primary Money Apportioned	$5,514,802 90
16. One Mill Tax	1,049,400 20
17. District Taxes	7,418,292 31
18. Library Money	68,835 63
19. Loans	4.359,244 34
20. Other Sources	768,648 49
21. Cash	3,699,970 51
22. Per Capita Cost per Year by School Census	21 03
23. Per Capita Cost per Year by Enrollment	30 68
24. General Tuition paid	6,900 21
25. Eighth Grade Tuition Paid	192,752 75
26. Expenses for the Several State Educational Institutions for the fiscal year ending June 30, 1911.	
University of Michigan:	
(a) Paid from State funds	$824,226 22
(b) Paid from other sources—tuition, productive funds, etc.	517,726 18
Michigan State Normal College:	
(a) Paid from State funds	195,792 43
(b) Paid from other sources	18,782 44
Central Michigan Normal School:	
(a) Paid from State funds	86,500 00
(b) Paid from other sources	5,060 70

Northern State Normal School:	
(a) Paid from State funds	55,500 00
(b) Paid from other sources	4,206 53
Western State Normal School:	
(a) Paid from State funds	85,000 00
(b) Paid from other sources	6,502 26
Michigan Agricultural College:	
(a) Paid from State funds	323,475 32
(b) Paid from other sources	139,932 15
Michigan College of Mines:	
(a) Paid from State funds	65,000 02
(b) Paid from other sources	33,270 55
School for the Blind:	
(a) Paid from State funds	64,705 00
(b) Paid from other sources	2,101 66
School for the Deaf:	
(a) Paid from State funds	99,186 27
(b) Paid from other sources	15,910 99
Industrial School for Boys:	
(a) Paid from State funds	99,000 00
(b) Paid from other sources	8,888 83
Industrial School for Girls:	
(a) Paid from State fund	72,000 00
(b) Paid from other sources	7,768 07
State Public School:	
(a) Paid from State funds	45,520 00
(b) Paid from other sources	9,595 39

NEW SCHOOL LAWS

The following is a brief synopsis of the laws affecting educational interests of the state, which were enacted by the recent legislature and, unless otherwise designated, will go into effect August 14, 1913:

Act No. 12 amends section 10 of Act No. 35 of the Public Acts of 1907 so that those counties which are willing to expend at least $20,000 in buildings and equipment and shall have acquired title to at least 80 acres of land for such purpose may establish a county school of agriculture, manual training and domestic science and be entitled to state aid to the amount of two-thirds of the yearly cost not exceeding $4,000 in any one year.

Act No. 53 makes it possible for school districts to bond for any amount up to ten per cent of the total assessed valuation without regard to the number of children on the school census list.

Act No. 21 enables boards of education in any district to pay tuition from the general fund for children who have not completed eight grades of work where such children live nearer a schoolhouse in another district than their own.

Act No. 45 makes it possible for the township board to change the boundaries or consolidate districts which are organized under any local act or special law as well as those organized under the general law.

Act No. 47 amends the compulsory school law so that children under 16 years of age who have passed the eighth grade are no longer exempt from the law unless they shall secure such permit as may be required under the statutes of Michigan covering the employment of minors, and shall be regularly employed at some lawful work if physically able to do so.

Act No. 146 makes the qualifications for school electors the same in every district in the state, city, township unit, graded or primary, whether organized and governed in whole or in part by a local act or acts. This act was given immediate effect. In all districts school electors are as follows: men and women who are citizens of the United States; at least twenty-one years of age; residents of the district at least three months preceding the election; either the parents or legal guardians of children on the school census in said district or owners of property which is assessed for school taxes in the district. In voting taxes, only tax-paying electors may vote.

Act No. 402 provides that the tax for the services of district officers in districts having less than fifty children cannot exceed $25, and in districts having between fifty and one hundred children, the tax shall not exceed fifty dollars, the amounts to be allowed for such services to be determined by the electors at the annual meeting. Heretofore the officers determined this under the same limits. This bill also takes away the power of township boards to remove officers for cause.

Act No. 197 increases the salary of the deputy superintendent of public instruction to $2,500 and authorizes the appointment of an assistant superintendent at $1,800.

Act No. 231 includes agriculture in the list of subjects on which teachers are to write for certificates and requires the board of supervisors to allow actual and necessary traveling expenses of the county commissioner and school examiners incurred in the discharge of their official duties in their own counties.

Act No. 268 requires districts which do not maintain high schools to pay tuition to any high school in the state. Heretofore it was limited to one of the three nearest high schools.

Act No. 361 makes it necessary for boards of supervisors to submit the question of establishing a county school of agriculture, manual training and domestic economy to the electors upon petition of at least ten per cent of the electors.

Act No. 315 requires publishers of textbooks, who desire to do business in the State of Michigan, to file copies of all textbooks sold by the publisher with the superintendent of public instruction, together with the sworn statement of the usual list price, the lowest wholesale price and the lowest exchange price. Accompanying this must be a bond agreeing to sell the books in Michigan at as low a price as they are sold anywhere in the United States. The bill also prohibits retail dealers from charging more than 15 per cent above the wholesale price, authorizes school districts to purchase and sell textbooks at the gross cost or to select an agent to handle the books, the agent not to charge more than ten per cent above the net wholesale price. When a family removes from one district to another within the state, the treasurer of the district shall purchase out of the general fund the textbooks in actual use by the children in the family at a fair price based on the condition of the books, the books to be resold to other pupils moving into the district.

Act No. 258 gives to the state board of education the power to provide for the care, maintenance and instruction of blind babies and children under school age. This act was given immediate effect.

Act No. 241 gives the treasurer of a graded district thirty instead of ten days in which to file his bond which does not have to exceed the greatest amount of money which he is liable to have in his possession at any one time. Formerly the bond was to be for twice the amount of money which would come into the treasurer's hands during the year.

Act No. 261 empowers city boards of education in cities where public libraries are under the control of such boards to include in their annual estimate sufficient funds to conduct the library properly and makes it possible for a bond issue to be provided for the purchase of library sites and buildings.

Act No. 251 reduces the number of members of the board of education in cities having a population of 250,000 or over to seven, providing the school electors vote in favor of such reduction.

Act No. 385 permits city school districts to be divided into election precincts and provides the manner of holding the elections therein. This act was given immediate effect.

Act No. 243 changes the final date of the apportionment of library money by the county treasurers to the first day of August of each year.

Act No. 229 permits a school officer to take the required affidavit of eligibility before the senior officer of the board as well as before a notary or justice of the peace.

Act No. 230 permits a district to vote to close the school for the ensuing year either at an annual or a special meeting and send the children to nearby schools. Formerly this action could be taken only at the annual meeting.

Act No. 235 requires the township board to attach to school districts all contiguous territory in the township which is not in any organized district.

Act No. 323 requires township and school boards, except in city districts, to purchase for their libraries only those books which are given on a list issued by the superintendent of public instruction and the state librarian and furnished to the township and district officers in charge of the libraries.

Act No. 359 permits the incorporation of kindergarten institutions of learning and prescribes the powers, duties and liabilities of such corporations.

Act No. 227 requires as a part of the curriculum of study in all the public schools, such humane education as shall include the kind and just treatment of horses, dogs, cats, birds and all other animals and also the important part they fulfill in the economy of nature.

Act No. 260 amends the anti-fraternity bill so as to require the board of education to investigate the facts concerning violations of the act and take such steps as it deems necessary to abolish such organization. The board may inflict such punishment upon the pupils as it deems expedient.

Act No. 307 provides that when fractional districts are concerned, the treasurer of the township in which the schoolhouse is located shall apply to the treasurer of any other township in which some part of the fractional district may be situated, for any money to which the district is entitled; and the treasurer paying over money shall take a receipt in duplicate, filing one in his office and sending the other to the clerk of the township in which the schoolhouse of the fractional district is located.

SUPREME COURT DECISIONS RELATING TO SCHOOLS AND SCHOOL DISTRICTS

CONSTITUTIONAL AND STATUTORY PROVISIONS:

Libraries are a recognized factor of civilization, a valuable instrumentality in education, enlarge and supplement the work of schools, and are within the proper range of school apparatus, and free public libraries are supplemental to and a part of the educational system of the state. KUHN VS. THOMPSON, 168 Mich. 511.

ADMINISTRATION OF SCHOOL AFFAIRS IN GENERAL:

School boards are separate and distinct corporations; they are municipal corporations and state agencies. KUHN vs. THOMPSON, 168 Mich. 511.

Under 2 Comp. Laws, Sec. 4810 (Public Acts 1891, Act No. 147), a person who has once held the position of county commissioner of schools is eligible for a further holding of the office. Attorney General vs. Lewis, 151 Mich. 81.

Under Act No. 271 of the Local Acts of 1893, page 301, as amended by Act 427 of the Local Acts of 1899, page 257, the Board of Education of the City of Holland, by section 12 of said former act, is expressly clothed with power to pass resolutions determining, establishing or enlarging a schoolhouse site. BOARD OF EDUCATION OF CITY OF HOLLAND vs. VANDERVEEN, 169 Mich. 470.

The deed of a new site for a schoolhouse was executed by the owner and his wife and left with the grantors' attorney, but was not recorded or delivered to the schoolhouse board or to any member thereof prior to the moving of the schoolhouse. HELD, the action of the board in placing the schoolhouse on a new site before acquiring the title, or a fifty year lease thereto, as required by Comp. Laws 1897, Sec. 4673, was unauthorized and illegal. CALKINS vs. RICE, 170 Mich. 234.

The provisions of the Comp. Laws 1897, Sec. 4728, requiring a notice to be given of a meeting of voters whenever the question of designating or changing a school site is brought up, applies to an annual meeting as well as to a special meeting. CALKINS vs. RICE, 170 Mich. 234.

A notice that the annual meeting of the school district will be held "for the transaction of such other business as repairing, building, or changing a site as may lawfully come before it," does not sufficiently give notice of intention to vote on the question of changing site as required by Comp. Laws 1897, Sec. 4728. CALKINS vs. RICE, 170 Mich. 234.

Where the act under which a school district is incorporated reserves to a board of education all powers and privileges conferred upon school boards and voters of school districts under the general school laws not inconsistent with such act and contains no provision for the issue of bonds for any purpose, a provision of the act authorizing a loan to obtain money to erect school buildings if an amount is required in excess of a certain limitation is not consistent with the general school laws, and under Comp. Laws 1897, Sec. 4717, as amended by Pub. Acts 1911, Act No. 12, the board may submit questions to qualified voters whether a school building be erected and whether bonds shall be issued, and upon an affirmative action of the electors proceed thereunder. PUBLIC SCHOOLS, CITY OF MUSKEGON vs. SMITH, 19 Det. L. N. 1266.

At a meeting of directors of a school district only two out of three were present. The record book showed a decision to employ plaintiff as teacher, but such record was not signed or attested. One Losinger brought to plaintiff a teacher's contract with the names of the two other directors appended thereto. The name of one of them was signed by his wife, which fact plaintiff did not discover until later. Losinger before delivering the contract for plaintiff, had erased his signature and informed plaintiff that his election was contested. Subsequently one Braman was found to be legally elected and displaced Losinger on the board. Plaintiff taught for two months and demanded her salary, which was refused. She continued to teach some two months thereafter. The three directors knew that she was carrying on the school work. Braman upon plaintiff's demand for salary, did not notify her that if she continued to teach she would not be paid, and sent his children to her during the entire term. Two members of the board were willing to recognize the validity of the contract. No person in the district protested against plaintiff's continuing the school work. HELD, plaintiff having entered upon her work under a written contract valid upon its face, and the school district having derived the benefits of her work, she was entitled to recover her salary. CHALMERS vs. SCHOOL DISTRICT NO. 1 REYNOLDS TP., 170 Mich. 250.

The power of a school board duly elected and qualified to enter into a contract for the employment of a superintendent of the school of the municipality, under the provisions of Sec. 3347, C. L. 1897, is only limited by the reasonableness and good faith of its action and the question of good faith and reasonableness of such action is for the determination of the jury.—DAVIS vs. PUBLIC SCHOOLS OF ESCANABA, 20 Det. L. N. 286.

BULLETIN NO. 45

STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

ARITHMETIC

Prepared by Miss Sara M. Nicholson, County Normal Supervisor.

THIRD GRADE

In arithmetic, as elsewhere, the child's best knowledge is acquired through doing and discovering underlying principles for himself. Relations and magnitudes, form and color, are made known to him through his own sense-perception.

In the formative and transition periods the child learns mechanical processes very quickly, but he reasons slowly and has very little power of abstract thought. In this system, therefore, abstract and mechanical processes are kept entirely separate from concrete work. They are taught through visualization and become automatic sight exercises very quickly. The concrete work is simple, varied and objective, and every principle is discovered through the dramatizing of problems, working them out with many objects and in many ways until the principles have become automatic sight exercises.

All work in the first six years is oral. The concrete exercises are simple but include all arithmetical principles and relations.

The work in visualizing includes addition, subtraction, multiplication and division of integers, fractions, decimals and denominate numbers. Through visualizing, results are discovered at sight, sums of long problems stated instantly, as well as differences, products and quotients, so that when the pupil enters the seventh grade he is master of reasoning processes as well as the automatic manipulation of numbers.

By visualizing is meant the power of mental vision that enables a person to see the whole independently of its parts. Just as he sees in a picture of a cat the whole animal and not the lines that compose it, or in a word as "house" the whole word and not the letters that form it, the child may be led to see in an addition problem as 12 the whole sum
25
42
79 as soon as the figures are flashed before him. It is the power of "thinking with the eyes," of seeing numbers in their relations, of combining them automatically and instantaneously the instant they are seen. The teaching of numbers by visualization has proved that much valuable time can be saved, that the subject of arithmetic is one of fascinating interest to pupils when presented in this way, and that the child has power and possibilities in him which have never been brought out by the older methods. It has been shown that any child can learn

arithmetic easily and naturally through the use of objects. The dullest child may be led to discover principles and apply them in a variety of ways until they have been automatically mastered.

The child's world in which he acquires knowledge is interesting and fascinating in so far as it is objectively real to him. Everything must have life and meaning to be of interest to him. The importance of sense-perception therefore and of sense-training cannot be overestimated. Encourage the child at every turn to use hands and eyes, to handle, weigh, estimate, count and discover for himself. Let him learn everything first hand under careful direction and wise questioning. In the meantime the work must be orderly and progressive, and all new knowledge fixed in his mind by frequent and thoughtful drill work.

The practical results obtainted in this grade are of less importance than the development of the power of picturing objects, to discover mathematical and proportional relations. It is important that all of the work of these grades appeals to the imagination and produces quick results. In the lower grades at least one-half of the time should be spent in the visualizing of abstract sums, differences, products and quotients.

Its results depend largely on the quickness of the teacher in placing and erasing figures and requiring instant results.

Have as many objects as possible brought into the work.

The visualization of abstract work is developed to include the double column in addition, carrying in subtraction. Fractions are developed through 12ths, 18ths, 20ths, 25ths, 50ths.

The decimal point is touched upon, and the units of measure include yard, square foot, cubic inch, and the application of measures including liquid, dry, foot ruler, yard stick and the scales.

Material: artificial coins, colored sticks, colored blocks, squares, cubes, cylinders, spheres, cones, prisms, colored cards, beans, corn, sand, clay, measures (gill, pint, quart, peck, bushel), foot ruler, yard stick and scales.

Count by 2's, 3's, 4's, 5's. Teach terms plus, minus, times product, cone, spherical, cubical, circular, and all new terms necessary to fix area, diameter, circumference, perimeter, oval, oblong. Teach time by the clock. Teach money by artificial money, pennies, nickels, dimes, quarters, half dollars, dollars.

In fractions review halves and thirds. Teach fourths.

Compare cylinders whose ratios are 1—2—3.

Develop statements.

This cylinder is twice as large as this cylinder. This cylinder is three times as large as this cylinder. This cylinder is one and one-half times as large as this cylinder. The ratio of this cylinder is ½.

If this cylinder weighs 5 pounds, this cylinder weighs 10 pounds, and this cylinder weighs 15 pounds.

If this cylinder is candy worth 10 cents, this cylinder is candy worth 20 cents, and this cylinder is candy worth 30 cents.

Use cubes whose ratios are 1—2—3—4. Call them A—B—C—D.

The ratio of A to B is ½.
The ratio of B to A is 2.
The ratio of A to C is ⅓.
The ratio of D to A is 4.
The ratio of C to A is 3.

If A is 1 pound of candy, B is 2 pounds, C is 3 pounds and D is 4 pounds. If A is worth 20 cents, B is worth 40 cents, C is worth 60 cents, and D is worth 80 cents.

If D is a dollar, A is 25 cents, B is 50 cents, C is 75 cents.

If D holds a gallon, A holds a quart, B holds 2 quarts, C holds 3 quarts.

Measure 1 foot. How many inches in a foot? Draw an inch with the measure. Erase and draw free-hand. Measure. Erase and repeat. In the same way practice until a foot can be drawn free-hand. Practice drawing 2 inches, 3 inches, 6 inches. How many inches in ½ foot? ⅓ foot?

Show a yard of ribbon.
How many feet long is it?
How many feet in ½ yard?
How many inches in a yard?
How many inches in ½ yard?
Measure a foot on the desk, on the table, on the blackboard.
Draw a line a foot long.
Draw a square foot.

For visualization:

Add 1 2 1 2 3 etc., until the combinations are recognized at sight.
1 1 2 2 1

Subtract 2 2 3 4 etc.
1 2 1 2

Read and write numbers to 100. Acquire through touch, size and weight. Let pupils handle the objects and learn their names, and spell and write the words. Let the child select an object or blindfold him and place in his hands. He will say:

"This is a sphere," and he will then write the sentence and learn to spell *sphere*.

Give exercises as follows: Have the children stand with their hands behind them. Drop into them cubes, cylinders, spheres, apples, etc., and have them tell what the object is. Let the child tell, write and spell his sentences. Let him describe the object.

Give many exercises to develop ideas of comparison. Have them pick up objects and make statements, as—

"This cube is twice as large as this cube." "This stick is three times as large as this stick." "This book is thicker than this book." "The green card is twice as wide as the yellow card." "The red card is half as long as the violet card."

Use boxes of equal size filled with paper shavings, sand, sawdust and clay to make comparisons in weight. Compare in size, blocks, cards, sticks. Compare in color, blocks, cards, sticks. Compare in weight many objects. Write all new sentences on the board. Have the children write them and spell the new words orally.

Count sticks, cards, beans, corn to 100. Add objects to fifty. Multiply beans, corn, sticks. Add 2 beans and 2 beans. Take 1 bean from 4 beans. Call the beans houses, dolls, children. Call the sticks soldiers, horses, men, and add, subtract, multiply and divide.

Count fifty cents in pennies.
Count fifty cents in nickels.
Count fifty cents in dimes.
Count fifty cents in quarters.
How many pennies in a nickel?
How many nickels in a dime?
How many dimes in 50 cents?
How many quarters in 50 cents?
Change 50 cents to nickels, to quarters, to dimes, to pennies.
Change a quarter to pennies. Change a dime to pennies.

Work with objects.

At 1 cent a stick, how many sticks of candy can be bought for 5 cents? For 10 cents? For 50 cents?

At 2 cents each, how many marbles can be bought for 10 cents? For 20 cents?

At 5 cents each, how many apples can be bought for 10 cents? For 15 cents? For 25 cents?

3 pencils cost 5 cents. How many can be bought for 10 cents?

6 pencils can be bought for 5 cents. How many can be bought for 10 cents?

One orange costs 5 cents. How much will 3 oranges cost? 4 oranges?

A doll costs 3 cents. How many can be bought for 9 cents? For 12 cents?

How many sticks in ½ of 10 sticks?
How many cards in ½ of 6 cards?
How many blocks in ½ of 4 blocks?
How many beans in ½ of 6 beans?
Find ½ of 8 pencils; 10 beans; 12 cards.
Find ⅓ of 3 beans; 6 sticks; 9 cards; 12 sticks; 15 pictures.
Give many exercises in finding ½ and ⅓ with objects.

Let the children play store at the table. One child will sell candy, marbles, pencils, books, and the other will buy with artificial money. A child says: "I am going to have a dolls' party, and I have 15 cents to spend. What can I buy?" The storekeeper says: "I sell two sticks of candy for 1 cent, apples are 1 cent each, and oranges are 2 cents each." The child says: "I shall buy 6 sticks of candy, two oranges and 4 apples." The storekeeper sells the goods and makes the change.

Let them buy sugar, candy, nuts, ribbon, books, cream, milk, calico and make change.

A pound of sugar costs 8 cents. How much change will be returned from a dime?

A marble costs 2 cents. How much change will be returned from a dime?

A book costs 20 cents. How much change will be returned from 25 cents?

Give rapidly many drills, as—Count 10 shells in a row. How many shells in 2 rows? In 5 rows?

Count 25 shells. Take away 10 shells.

Count 18 shells. Divide into 3 rows. How many in each row?

Develop the use of terms, pint, gill, quart, pound, yard, foot, square, circular, sphere, cube, prism, cylinder, sum, difference, ratio; comparative terms as tall, taller, tallest; long, longer, longest.

Show blocks whose ratios are 1 and 2. Lead the children to make comparisons, as,—"This block is twice as large as this block." "The ratio of this cube to this cube is ½."

This cube will be contained in this cube 2 times.

If this cube is 5 cents, this cube is 10 cents.

Measure a pint of water, two pints. Compare a pint and a quart.

If a pint is worth 5 cents, how much is a quart worth?

If a quart is 20 cents, how much is a pint worth?

Weigh a pound of sand, a pound of sawdust, a pound of clay. Use in examples.

Show a yard of calico, a yard of ribbon. Use in exercises.

Make the children familiar with the real pound, pint, quart, yard.

Measure a line a yard long in the same way. Square it. Compare it with a yard of calico.

Measure many small areas. Estimate length and width of many small areas. Measure to prove.

Explain perimeter.

Find perimeter of the table, the desk, space on the blackboard, pictures, window glass, many objects.

Make many simple problems for each exercise and have them solved quickly. Finish each exercise with a drill of abstract problems, that is, without the use of objects, but involving the same principles that have been found with objects and measures.

With the measures find: gills in a pint; pints in a quart; quarts in a gallon.

Give many problems with measures for dramatization.

With measures find: quarts in a peck; pecks in a bushel.

Dramatize problems.

Dramatize:

Let a child keep store. Let others buy a quart and a pint of cream, a gallon and a half of vinegar, a pound and a half of tea, a dozen and a half of bananas, three dozen peaches. Let the storekeeper make change, measure, weigh, count. Do not spend too much time on the details of buying and selling, however. Use judgment and eliminate anything that takes too much time. Many problems may be dramatized in a very brief time if everything is thought out and prepared for in advance.

Follow the exercises with drill problems. Let the children make up problems, measure, weigh, count.

Count by 4's to 100.

How many 4's in 100?

How many 4's in 20?

How many 4's in 40?

Divide a stick into 4 parts. Divide an apple. Divide an orange.

How many fourths in an apple? In an orange? In a stick? In a ball? In a pencil?

Which is better, ¼ of an orange or ½? How much better?

Fold papers into fourths, circles, squares. What is ¼ of 1? Of 4?

There are 16 oz. in a pound. How many ounces in ¼ pound? 4 lbs.?

There are 8 pints in a gallon. How many pints in ¼ of a gallon?

Compare blocks whose ratio are 1—4. Make up problems.

How many ounces in 1¼ lb.?

How many quarts in 1¼ gal.?

How many ones in a dozen? In 2½ doz.? In 3¼ doz.?

How many oranges in 5½ doz.?

Dramatize.

How many ounces in 3¼ lb.? At 5 cents an ounce, how much will 2¼ lb. cost?

At 3 cents each, what will 3¾ doz. peaches cost?

At 2 cents for 3, what will 9 marbles cost? At 2 for 1 cent, what will 8 marbles cost?

At 2 for 1 cent, how many marbles can be bought for 10 cents?

At 3 for 5 cents, how many pencils can be bought for 50 cents?

At $.01½ a pint, what will a quart and a pint of vinegar cost?

How much change will be returned from 50 cents if a boy buys 2½ doz. pears at $.16 a dozen?

How much sugar at $.08 a pound can be bought for $.50?

How many quarts in 2 gallons?

At $.05 each, how many oranges can be bought for $.48?

½ lb. of maple sugar cost Alvin 7 cents. How much can be bought for $.35?

2 oranges cost $.06; how many can be bought for $.50?

If ¼ doz. eggs cost $.08, how many can be bought for 16 cents? 24 cents?

If ¼ doz. apples cost 10 cents, how much will 5½ doz. cost?

Fold paper in fourths; eighths. How many eighths in ¼? In ½?

Devolop with lines, squares, foldings and cuttings.

Fold papers in 5ths, 10ths. Compare in the same way.

Weigh ½ lb., ¼ lb.

Compare. Make problems.

Measure 30 inches, ⅕, 1/10. Compare. Make problems.

Count ⅓ and ⅙ of 60 beans. Compare. Make problems.

Make statements of comparisons.

Dramatize.

Johnnie has 25 marbles. Billy has ⅗ as many as Johnnie. How many has Billy?

Mamie bought 5 yd. of cloth, and used ⅗ of it for a dress. How many yards in the dress?

Johnnie sold 10 papers one evening and ⅗ as many the next. How many papers did he sell?

Janie has 24 cents. Lucile has ¾ as much. How much has Lucile?

Elizabeth has 1/10 of 60 cents and Beatrice has ⅓ of 60 cents. How much has each?

John has ¼ of a dollar, and Harry has ½ of a dollar. How much has each?

How many oranges in ⅓ of a dozen? In ⅙ of a dozen?

How many apples in ½ of a dozen? In ¼ of a dozen?

Give many abstract problems, as ½ of 6, ⅓ of 12, ⅔ of 18.

Dramatize many problems in storekeeping, simple measure.

In all possible ways bring the senses into active use in discovering relations, and developing concepts of form, color, value, size.

Problems:

How many pints can be put into a gallon measure? Into a 6 quart measure? Into a gallon and a half jar?

In how many rows of 6 each can 48 marbles be placed?

How many rooms will be occupied by 28 dolls if 4 dolls live in each room?

How many half ounce packages can be made of 2 lb. of ginger?

How many 2 oz. cans will be filled from 3 lb. of cloves?

How many bouquets of 6 carnations each can be made from 5 doz. carnations?

How many shells will cover 4 sides of a box if there are 14 on each side?

A boy sells 3 papers for 1 cent, and earns 16 cents. How many papers did he sell?

Olive goes 20 feet east and Jimmie 30 ft. west. How far apart are they?

Olive and Jimmy ride in the same direction. Olive goes 60 yds. in a minute and Jimmy goes 40 yd. How far apart are they?

Read and write numbers to 1,000.

Read and write U. S. money $100 00/100.

Give problems.

Read and write Roman numerals.

Fractions ⅕, 1/10, ⅛, ⅙, ⅓, ½, ¼.

Measures. Review pint, quart, gill, gallon, peck, bushel, pound, ounce, inch, foot, yard. Learn second, minute, hour, day, week, month, year. See that all children in the grades can tell time. Keep store and make change to $5.

Teach angle, triangle, rectangle, circumference, diameter, parallel, horizontal.

In visualizing increase sums, as,

24	12	32	123
36	18	28	125
25	40	46	146
		18	

Difference—

42	60	32	90
25	28	21	26

Times—

8 x 9	7 x 9
12 x 12	11 x 11

All combinations to 12 x 12.

Division, the inverted combinations, as,

$\frac{144}{12}$ $\frac{80}{10}$ $\frac{48}{4}$ $\frac{90}{10}$ $\frac{72}{6}$ $\frac{96}{12}$ $\frac{72}{12}$ $\frac{45}{9}$

Also add—

$.25	$1.25
.08	.32
.17	1.15

9 bu.	4 bu. 1 pk.
3 bu.	2 bu. 1 pk.
2 bu.	

Give many drills, as,

3/4 2/4 1/4 5/4
1/2 1/2 1/2 1/2
2/3 1/3 5/3
5/3 2/3
7/6 1/6 2/6

All the work done in fractions should be done with objects. Use simple concrete problems, but use a great many and of as much variety as possible. All new principles may be discovered first by hand and all new problems worked out with objects. Measure, weigh, count, estimate, find relations with objects.

Questions ought to be well directed and carefully planned. The material should be prepared so that the work will move quickly, consecutively and systematically. All statements should be made in clear, simple, well arranged sentences. Use the blocks daily. Discover new principles and relations.

Let them represent many things, as, show blocks whose ratios are 1—2—3—4. Call them A—B—C—D. A is a house worth $100. B is a 5 room house. C is a bin containing 24 bu. D is 100 yds. of cloth.

Find the value of the others. If A is worth 15 cents, what is each of the others worth?

If D is a yard, how many inches in each of the others?

If D is worth $200, what is each of the others worth?

Use the measures.

Find:

pints in a quart;
gills in a pint;
quarts in a gallon.

Make problems.

Find:

pints in a quart;
quarts in a peck;
pecks in a bushel.

Make problems.

Find ounces in a pound. Make problems.

Find inches in a foot and inches in a yard. Make problems.

Give many problems in hours, minutes, seconds, days, weeks, months, sheets, quires.

Find the perimeters of many rectangles, parallelograms.

Fold papers in a rectangle, triangles.

Draw circles, cut, fold; develop diameter, circumference.

Review with measures, etc., linear measure, foot, yard.

Build a square inch.

Draw with rule. Draw free hand. Measure, correct.

Draw a square foot. Divide into square inches.

How many inches in a row? How many rows? How many square inches?

Give many simple problems. (With objects.)

Draw a square yard. Divide into square feet. Compare it with a yard of calico. Give many simple problems. Find square yards in the schoolroom. What is the area of a square yard? The perimeter?

If ⅓ of a yard of cloth is worth 65c, how much is ⅔ of a yard worth?

If ⅙ of a pound of coffee cost $.20, how much will a pound cost? 4/6 of a pound?

If 1/7 of a package of nails weighs 2 lbs., how much will 4/7 of a package weigh?

If ⅔ lb. of candy can be bought for 20 cents, how much will a pound cost?

If ¾ doz. oranges sell for 18c, for how much will a dozen sell?

If ⅔ of a yard of cloth cost 50c, how much is a yard worth?

10 cents is ⅕ of May's money. How much has she?

15 cents is ¾ of John's money. How much has he?

18 roses are ¾ of Bessie's flowers. How many has she?

How much is ⅘ of $1.00; ⅔ of $.60; ⅚ of $.24; ⅞ of $.48; 9/10 of $.50?

Dramatize—

Two boys go into partnership selling candy. Alfred puts in $2 and John $3. If the profits are 50c, what is each one's share?

Fifty cents is five dimes. 5 dimes are gained on $5. How much is gained on $1?

Two boys start from the same place and go in the same direction. John goes 5 mi. an hour and Peter 7 mi. an hour. How far apart are they in 4 hours?

If they go in opposite directions, how far apart will they be in 4 hours?

At 25c each, how many books can be bought for $1.25? For $2.50?

How many pints of chestnuts in a bushel? At $.03 a pint what are they worth?

How many ounces in a pound? In 2½ lbs.? What will a bushel of apples cost at 20c a peck?

What will 3½ doz. peaches cost at 32c a dozen?

Let one boy act as storekeeper, and have pupils call for goods. "Good morning, Lewis," the pupil says, "I wish to buy 3½ lbs. of candy." "It is 18c a pound." The storekeeper asks the class as bookkeepers, "How much will it cost?" "How much change shall I receive from a $2 bill?"

For rapid drill:

At 12c each, find the cost of 96 tablets.

At 15c each, find the cost of 24 watches.

How many ounces in 7½ lb.?

How many peaches in 15½ doz.? At 3½c each, what will 24 tops cost?

A boy earns 18c a day. How much will he earn in 16 days?

9 yd. of ribbon cost Elsie $1.35. How much did a yard cost?

15 lb. of sugar cost $1.20. How much will 12 lb. cost?

18 boxes of bonbons cost $27. How much will 1 box cost?

Arthur sells 3 apples for 5c. What does he receive for 2 doz.?

How many pints in 16 gallons?

How many quarts in 24 pt.?

How many bushels in 24 pt.?

How many bushels in 128 pt.?

At 2c a foot, what will 3⅓ yd. of wire cost?

At 7c each, how many erasers can be bought for $2.10?

At 9c a quart, how many quarts of berries can be bought for $3.60?

At 16c each, how many spelling books can be bought for $1.28?

Mary saves 15c a day. How much will she save in January?

How many hours in seven days?

How many pint boxes can be filled from a bushel and a half of strawberries?

How many half-pint bottles can be filled from 2½ gallons?

How many quarts of cherries in 4¾ bushels?

How many pecks in 18 bushels of potatoes?

What will 3 pk. cost if a bushel is worth 80c?

Select solids whose ratios are 1, 2 and 3. Visualize and remove.

Require all answers in good sentences and develop results; as—

The first solid is ½ as large as the second solid.

The second solid is ⅔ as large as the third solid.

The third solid is 3 times as large as the first solid.

The third solid is 1½ times as large as the second solid.

The second solid is twice as large as the first solid.

The ratio of the first solid to the second solid is ½.

The ratio of the second solid to the third solid is ⅔.

There are three small solids in the large solid.

The second solid will be contained in the third solid 1½ times.

The small solid will be contained in the second solid twice.

If the first solid weighs 1 lb., the second solid weighs 2 lb. and the third solid 3 lb.

If the first solid is worth 10 cents, the second solid is worth 20 cents and the third solid 30 cents.

If the third solid is worth 18 cents, the first solid is worth 6 cents and the second solid 12 cents.

If the third solid weighs 21 lb., the first solid weighs 7 lb. and the second weighs 14 lb.

If the second solid is worth 10 cents, the first is worth 5 cents and the third is worth 15 cents.

If the third weighs one pound, the first weighs ⅓ of a pound and the second weighs ⅔ of a pound.

With cards whose ratios are 1, 2, 4, 12, represent 1 year, 6 months, 3 months, 1 month.

6 months is what part of a year?

1 month is what part of a year?

3 months is what part of a year?

1 month is what part of 6 months? Of 3 months?

3 months is what part of 6 months? Of 1 year?

A boy saves $12 a year. How much does he save in 6 months? In 3 months? In 1 month?

A girl spends $24 in a year. How much does she spend in 3 months? 1 month? 6 months?

What is the ratio of 1 month to 3 months? To 6 months?

What is the ratio of 3 months to 6 months? To 1 year?

What is the ratio of 6 months to 1 year? 6 months to 3 months?

What is the ratio of 1 year to 3 months? To 6 months? To 1 month?

At 25 cents a month, how much can a boy save in 3 months?

A man rents a barn for $36 a year. How much is that for 6 months? For 3 months? For 1 month?

How many months in ½ year? ⅓ year? ⅔ year? ¼ year? ¾ year? 1/12 year?

Fold strips of paper in thirds, sixths and twelfths.

How many sixths in ⅓? In ⅔? In 3/3?

How many twelfths in ⅙? 2/6? 3/6? 5/6? 6/6?

What is the ratio of ⅙ to ⅓? ⅓ to ⅙?

What is the ratio of 1/12 to ⅙? ⅙ to 1/12?

How many twelfths in 1? In ½? In ⅓? In ⅙?

What is the ratio of 1/12 to ⅓? 1/12 to ½? 1/12 to ⅙?

Develop eighths in the same way.

Which is larger, ⅛ or 1/12? ⅙ or ¼? ⅓ or ¼? ½ or ⅓? ⅔ or ¾? ⅞ or 5/6? ⅞ or 11/12?

Divide counters into twelfths. Make problems.

Divide counters into eighths. Make problems.

Divide counters into sixths. Make problems.

Divide counters into fourths. Make problems.

At ⅛ of a dollar each, how many books can be bought for a dollar? A half-dollar? A quarter dollar?

At ⅛ of a dollar for 2 lb., how many pounds of rice can be bought for 1 dollar? ½ dollar? ¾ dollar?

At 1/12 of a dollar apiece, how many tops can be bought for 1 dollar? For ½ dollar? For ¼ dollar?

Which would you rather receive, ⅛ of a dollar or 1/12 of a dollar? ⅞ or 7/12?

What is the ratio of ⅛ to ⅜? To ⅝? To 4/8?

What is the ratio of 2/8 to 3/8? 2/8 to 6/8?

There are 10 cents in ⅜ of John's money. How much is 6/8?

There are 9 cents in 3/12 of Mary's money? How much in 6/12? In 9/12?

What is the ratio of 3/12 to 6/12? 3/12 to 9/12?

Divide a line into 10 equal parts.

What is each part called?

Draw rectangles whose ratios are 1 and 10? Make problems.

Draw a line the length of the first line. Divide it into 5 equal parts. Each part is called what?

How many tenths equal ⅕?

How many tenths in 2/5? 3/5? 4/5? 5/5?

What is the ratio of 1/10 to ⅕? ⅕ to 1/10? ⅕ to⅗? 1/5 to 4/5? ⅘ to ⅕? ⅗ to ⅕? ⅕ to 3/10? 1/5 to 7/10? 1/5 to 8/10?

How many fifths in 2/10? In 4/10? In 6/10? In 8/10?

How many tenths in ⅗? In ⅘? In 5/5?

How many cents in ⅕ of a dime? 1/10 of a dime? In ⅕ of a half-dollar? In 1/10 of a half-dollar? In ⅕ of a dollar? In 1/10 of a dollar?

At ⅕ of a dollar each, how many melons can be bought for $1.00?

At 1/10 of a dollar each, how many melons can be bought for $1.00?

Measure 1 foot on the blackboard; on the table; on the desk; on the floor; on the wall. Draw foot lines; draw them free-hand; compare; correct. Draw foot line. Divide it into halves, quarters, 6ths, 12ths.

What is the ratio of 1 inch to 1 foot? 1 inch to 6 inches? 3 inches to 6 inches? 3 inches to 12 inches? 12 inches to 3 inches? 6 inches to 3 inches? 3 inches to 1 inch?

How many 3 inches in 12 inches? 6 inches in 12 inches? 2 inches in 12 inches.

12 inches is how many times 2 inches? 3 inches? 6 inches?

At 5 cents an inch, what will a foot of wire cost? ½ of a foot? ⅙ of a foot? ¼ of a foot?

At 10 cents for 3 inches what will a foot of molding cost? At 20 cents for 6 inches? At 8 cents for 2 inches?

At 1 cent for ½ an inch, what will a foot of wire cost?

At 1 cent for 4 inches of wire, what will 1 foot cost?

Find right angles in the room, corners, picture moldings, table, desks, etc.

Draw right angles. Draw a circle and divide it into four right angles.

Draw rectangles from dictation. As "Draw a rectangle whose dimensions are 5 by 8." Cut from dictation. Cut a rectangle 4 by 8 inches. Fold in inch squares. How many rows? Inches in each row?

Cut a rectangle 3 inches by 6 inches? Fold in inch squares? How many rows? Inches in a row? Inches in the rectangle?

Cut a rectangle 9 inches by 5 inches. Fold in inch squares. How many rows? Inches in a row? Inches in the rectangle?

Study dimensions of solids and estimate as 2 by 2 by 2 inches. 1 by 2 by 3 inches.

Cover the eyes and tell by feeling forms and dimensions of solids.

Measure gills, pints, quarts and gallons of water.

How many gills in a pint? Pints in a quart? Quarts in a gallon? Pints in a gallon? Gills in a quart? Gills in a gallon?

What is the ratio of 1 gill to 1 pint? 1 pint to 1 quart? 1 quart to 1 gallon? 2 quarts to 1 gallon? 1 gallon to 2 quarts? 1 gallon to 1 pint? 1 gill to 1 quart? 1 quart to 1 gill?

At 2 cents a gill, find the cost of a quart of oil.

Find the cost of 3 pints of oil at 10 cents a gill.

Find the cost of 2 quarts of molasses at 5 cents a pint.

Find the cost of 1 gallon of vinegar at 5 cents a pint.

Find the cost of 1 quart, 1 pint of cream at 15 cents a pint.

Find the cost of 1 gallon, 1 quart of milk at 4 cents a pint.

Measure a yard on the blackboard; on the floor; on the table.

Estimate the number of yards to the door; to the table; to the window. Measure.

Draw a yard line on the blackboard. Draw free-hand. Compare. Correct. Practice drawing yard lines.

Draw a yard line. Divide into halves and quarters.

What is the ratio of ¼ yard to 1 yard? ½ yard to 1 yard? ¾ yard to 1 yard? 1 to ½ yard? 1 to ¼ yard?

How many quarter-yards in 2 yards? In 3 yards? 5 yards? 6 yards?

How many half-yards in 5 yards? 10 yards? 15 yards?

How many feet in 2 yards? 3 yards? 4 yards? 5 yards?

How many inches in 2 yards?

Measure 2 yards on the floor; 3 yards; 5 yards; 4 yards; 6 yards; 1½ yards; ½ yard; ¼ yard.

Weigh 1 pound of sand. ½ pound. ¼ pound.

Weigh chalk, paper, clay. Which is heaviest? Which lightest?

How many ounces in 1 pound? In ½ pound? In ¼ pound?

Divide a line 16 inches long into halves and quarters. Call the line 1 pound.

What is the ratio of 1 ounce to 1 pound? ½ pound to 1 pound? ¼ pound to 1 pound? 1 pound to 4 ounces? 1 pound to 8 ounces?

How many ounces in 2 pounds? 3 pounds? ½ pound? ¼ pound?

At 2 cents an ounce, find the cost of a pound of cloves.

At 10 cents for a quarter-pound, find the cost of 2 pounds of tea.

At 5 cents for a half-pound, find the cost of 3 pounds of candy.

At 6 cents for 8 ounces, find the cost of 2 pounds of sugar.

At 3 cents for four ounces, find the cost of a pound of nuts.

At 10 cents for a quarter-pound, find the cost of 2 pounds of coffee.

At $1 a pound, find the cost of 4 ounces of wafers.

At 40 cents a pound, find the cost of ¾ of a pound of coffee.

At 18 cents a pound, find the cost of 2½ pounds of tomatoes.

At 12 cents a pound, what will 2½ pounds of walnuts cost?

At 15 cents a pound, what will ⅔ of a pound of cherries cost?

At 60 cents a pound, what will ¾ of a pound of tea cost?

At 27 cents a pound, what will ⅔ of a pound of mustard cost?

At 16 cents a pound, what will ½ of a pound of candy cost?

Measure 8 quarts of sand into a peck measure. 4 pecks into a bushel measure. How many quarts in a peck? Pecks in a bushel? Quarts in a bushel?

Draw lines representing ratios of 1 quart to 1 peck; 1 peck to 1 bushel.

Draw squares showing these relations. What is the ratio of 1 quart to 1 peck? 1 peck to 1 bushel? 1 quart to 1 bushel? Cut paper strips showing these relations.

How many pecks in 1 bushel? 2 bushels? 3 bushels? 4 bushels? ½ bushel? ¼ bushel?

How many quarts in 1 peck? ½ peck? ¼ peck?

At 10 cents a peck, find the cost of a bushel of potatoes.

At 12 cents a peck, find the cost of 2 bushels of onions.

At 10 cents a quart, what will a peck of beans cost?

At 7 cents a quart, what will ½ bushel of hickory nuts cost?

At 15 cents a peck, find the cost of a bushel of crabapples.

Give many problems.

Draw a 7-inch rectangle divided into square inches to represent 1 week. 1 day is what part of a week? 2 days is what part of a week? 3 days? 4 days? 5 days? 6 days?

What is the ratio of 1 day to 1 week? 1 week to 1 day? How many days in ½ of a week? ¼ of a week?

How many hours in a day?

Draw a 24-inch line to represent a day. Mark off halves and quarters. What is the ratio of each to each?

How many hours in a half day? A quarter? Three-quarters? What is the ratio of ¼ day to ½ day? ½ day to 1 day? ¼ day to 1 day? 1 day to ¼ day? 1 day to ½ day?

How many hours in 1½ days? 2 days? 1¼ days? 1¾ days?

Let a card 60 inches long represent a minute, one ½ as long represent a half-minute, one ¼ as long represent a quarter-minute. Or use cards of any lengths in the same proportion.

What is the ratio of ¼ minute to ½ minute? To 1 minute? ½ minute to 1 minute? 1 minute to ¼ minute? 1 minute to ½ minute? How many fourths in ½? In 1? How many seconds in 1 minute? In ½ minute? In ¼ minute? In ¾ minute?

How many seconds in 1¼ minutes? 1½ minutes?

How many quarter-seconds in 2 seconds? In 3 seconds? In 5 seconds? In 6 seconds?

How many half-seconds in 1 minute? In 3 minutes? In 10 minutes? In 8 minutes?

What is the ratio of 15 seconds to 30 seconds? To 45 seconds? To 60 seconds? 60 seconds to 15 seconds? 60 seconds to 30 seconds? 60 seconds to 45 seconds?

Use the same cards to represent 1 hour? What is the ratio of ¼ hour to ½ hour? To 1 hour.

What is the ratio of 1 hour to ¼ hour? 1 hour to ½ hour?

What is the ratio of ¾ hour to 1 hour?

How many minutes in 1 hour? In ½ hour? In ¼ hour? In ¾ hour?

How many minutes in 1½ hours? 1¼ hours?

How many seconds in a quarter-minute? A half-minute?

How many hours in ½ and ¼ of a day?

How many minutes in ½ and ¼ of an hour?

How many seconds in ½ and ¼ of a minute?

How many minutes in ¾ of an hour?

How many hours from 5 a. m. to 12 m.?

How many hours from 1 a. m. to 10 a. m.?

How many hours from 12 m. to 3 p. m.?

How many hours from 1 p. m. to 6 p. m.?

How many hours from 2 p. m. to 9 p. m.?

How many hours from 8 p. m. to 12 p. m.?

How many hours from 2 p. m. to 11 p. m.?

The visualizing of sums, differences, products and quotients in the abstract drill which forms half of the daily work is a development of the work of the previous grade. Single columns of figures are added, the columns growing in length as rapidity is acquired In columns such as
7
2
6 the pupils soon see, not 7, 2, 6, 3, 5, but 9, 9, 5, seeing the combination
3
5
simultaneously with the figure, and eventually they learn to see the whole sum, just as we see the whole written word rather than the letters which form it. Rapidity, persistence and patience on the part of the teacher soon bring results that are quite wonderful to the uninitiated. Also, in the visualizing of subtraction problems, teach subtraction from left
72
to right, as 21, have the child see first that 5 added to 2 makes 7, and then that 1 added to 1 makes 2.

In this grade it is better to continue the combination drills in subtracting, and give such problems, as,

$$\begin{array}{ccccccccc} 9 & 8 & 12 & 6 & 7 & 5 & 11 & 10 & 6 \\ 3 & 2 & 3 & 3 & 3 & 3 & 3 & 3 & 3 \end{array}$$

until the result is "spelled" instantly in the child's mental vision. In finding the difference between $\begin{array}{r} 12 \\ -3 \\ \hline \end{array}$ teach them to "spell" 9 at the first glance.

Also as the work develops, lengthen the problem to

$$\begin{array}{cccc} 83 & 832 & 25 & 254 \\ \underline{21} & \underline{211} & \underline{12} & \underline{122} \end{array}$$

In division and multiplication the work develops simultaneously. When the fact that six threes are 18 has been developed through concrete symbols, the child has also learned that

$$\frac{18}{6} = 3 \text{ and } \frac{18}{3} = 6.$$

In multiplying place on the board the multiplier 6. Write after it 3 and erase, the first child rises, turns and says at once 18; then write 4, 7, 8, 2, etc., the children in turn rising, turning and stating the result. The teacher with chalk in one hand and eraser in the other writes and erases as swiftly as her hands can move and the children must respond as quickly. The division work is done in exactly the same way, adhering to the form $\frac{18}{6}$, $\frac{18}{3}$, $\frac{27}{9}$, $\frac{48}{12}$, etc.

For visualizing, give work similar to the following:

$$\begin{array}{ccc} 7 & 6 & 2 \\ 3 & 8 & 9 \\ 4 & 7 & 7 \\ 5 & 3 & 3 \\ \underline{8} & 2 & \underline{6} \\ & \underline{4} & \end{array}$$

Subtract

$$\begin{array}{cccccccc} 12 & 15 & 11 & 10 & 9 & 7 & 8 & 12 \\ \underline{3} & \underline{3} & \underline{3} & \underline{3} & \underline{6} & \underline{6} & \underline{6} & \underline{6} \end{array}$$

Multiply $5 \left\{ \begin{array}{l} 9 \\ 8 \\ 6 \\ 7 \\ 3 \end{array} \right.$ $4 \left\{ \begin{array}{l} 12 \\ 10 \\ 3 \\ 2 \\ 8 \end{array} \right.$

Divide $\frac{25}{5}$ $\frac{9}{3}$ $\frac{7}{1}$ $\frac{18}{2}$ $\frac{27}{3}$ $\frac{48}{6}$ $\frac{48}{12}$ $\frac{50}{10}$

Multiply

$$\begin{array}{ccccc} 10 & 12 & 4 & 15 & 20 \\ \underline{2\frac{1}{2}} & \underline{3\frac{1}{3}} & \underline{2\frac{1}{2}} & \underline{2\frac{1}{3}} & \underline{2\frac{1}{2}} \end{array}$$

Also visualize sums:

$$\begin{array}{r} \$.01 \\ .12 \\ .15 \\ \hline \end{array} \quad \begin{array}{r} \$.03 \\ .14 \\ .22 \\ \hline \end{array} \quad \begin{array}{r} \$.05 \\ .14 \\ .21 \\ \hline \end{array} \quad \begin{array}{r} \$.15 \\ .03 \\ \hline \end{array} \quad \begin{array}{r} \$.10 \\ .09 \\ \hline \end{array}$$

Multiply $2 \left\{ \begin{array}{r} \$.01 \\ .30 \\ .15 \\ .16 \end{array} \right.$

REVIEW.

Draw circles. Divide into thirds, fourths, fifths, tenths, eighths, twelfths.

Draw lines. Divide into halves, quarters, thirds, eighths, fifths, twelfths, tenths.

Draw squares. Divide into fourths, halves, eighths.

Draw rectangles from dictation. Divide. Fold paper squares to form figures from dictation, as rectangles, angles.

At 3 cents an inch, find the cost of 1½ feet of wire.

At 12 cents a foot, what will 2 yards of ribbon cost?

At 7 cents a pint, what will 3 quarts of berries cost?

At 8 cents an ounce, what will a quarter of a pound of tea cost?

At 7 cents for 3, what will 1½ dozen eggs cost?

At 9 cents for 6, what will 24 pears cost?

At 15 cents for 2, what will 6 pineapples cost?

What is the distance around an eleven-inch square?

At 8 cents for 6 inches, what will 2 yards of ribbon cost?

How many quarts in 1½ bushels?

How many pints in a peck?

How many quarts in 2 pecks?

What is the ratio of a foot to a yard?

What is the ratio of 7 inches to a foot?

What is the ratio of 9 ounces to a pound?

A boy earns 10 cents a day. How much does he earn in a week? If he earns 12 cents a day, how much does he earn in half of a week?

A girl walks 2 miles every day to and from school. How far does she walk in two weeks?

There are 8 feet in one piece of cloth, 3 in another, 4 in another and 6 in another. How many yards in all?

There are 2⅓ yards in 1 rug, 2⅔ in another. How many in both?

At 2 cents each, what will 3 dozen oranges cost?

At 1 cent for 2, what will 18 apples cost?

At 3 cents for 2, what will 10 peaches cost?

A boy puts in his bank 3 cents a day. How much does he save in 3 weeks?

If a boy sleeps ⅓ of a day, plays ⅓ of a day and works and goes to school the rest of the time, how much time does he spend at school and at work?

8 boys earn 48 cents between them. How many does each boy earn?

A girl buys cloth at 6 cents, ribbon at 8 cents, lace at 4 cents, thread at 4 cents, and gives the clerk 50 cents. How much change should she receive?

A boy having a dollar spent 38 cents and lost 15 cents. How much had he left?

What is the ratio of 15 cents to 30 cents? 1 hour to 24 hours? 7 days to 42 days?

When oranges are worth 5 cents for 3, how many can be bought for 30 cents?

When apples are worth 5 cents for 2, how many can be bought for 25 cents?

When marbles are sold 3 for 1 cent, how many can be bought for 11 cents?

When peaches are sold 2 for 3 cents, for how much will a dozen be sold?

When eggs are 15 cents a dozen, how much will $\frac{2}{3}$ of a dozen cost?

At 7 cents for a third of a yard, how much will 3 yards of ribbon cost?

At 9 cents for 2 yards, how many yards of cotton can be bought for 45 cents?

How many pints in 2 quarts and 1 pint?

How many gills in 3 pints?

How many ounces in $1\frac{1}{2}$ pounds?

How many minutes in 1/12 of an hour?

How many hours in 1 day? $\frac{1}{2}$ day? $\frac{1}{3}$ day?

How many hours from 6 a. m. to 12 m.? To 1 p. m.? To 2 p. m.?

At 4 cents for $\frac{1}{2}$ of an inch, what is a half-foot of molding worth?

How many inches in $2\frac{1}{2}$ feet?

How many seconds in $1\frac{1}{2}$ minutes?

Write:

83 cents; 12 cents; 9 cents; 11 cents; 5 cents; 52 cents; one dollar.

Have pupils select forms whose ratios are 1—2—3—4. Visualize and remove.

How many times is 1 contained in 2? In 3? In 4?

What is the ratio of 1 to 2? 1 to 3? 1 to 4? 4 to 1? 4 to 2? If 1 is worth 2 cents, what is the value of each? If 1 weighs 2 lbs., what do the others weigh?

If one is an acre of land worth $40, what is the value of the rest of the land? If one is worth $10, what is each of the others worth?

1 is a farm that rents for $80 a year; for how much should each of the others rent?

4 is a farm that rents for $100 a year. For how much should each of the others rent?

3 is a piece of land worth $75. What is the value of each of the other pieces of land?

Four is a peck. How many quarts in 3? In 2? In 1?

1 is a house which two persons can live in. How many persons can live in 2? 3? 4?

4 is a day or 24 hours. How many hours in 3? In 2? In 1?

4 is 60 minutes. How many minutes in 3? In 2? In 1?

4 is 1 minute. What part of a minute is 1? 2? 3?

Make paper boxes which shall be to each other as 1, 2, 3, 4. Call them A, B, C, D. Express results of comparisons, as,—

A will be contained in B twice.
B is twice as large as A.
B is half as large as D.
D will contain B twice.
In D there are four A's.
The ratio of A to B is $\frac{1}{2}$.
The ratio of A to C is $\frac{1}{3}$.
The ratio of A to D is $\frac{1}{4}$.
The ratio of B to A is 2.

The ratio of C to A is 3.

The ratio of D to A is 4.

Call A, 2, then B is 4, C is 6. D is 8. A is an acre of land worth $40. Then B is worth $80. C is worth $120. D is worth $160.

D is 1. Then A is ¼, B is ½, C is ¾.

D is 100% Then A is 25%, B is 50%, C is 75%.

Draw a foot line.

Square it.

Divide it into square inches.

Measure one square foot on top of the desk, on the blackboard, on the wall, on the floor, on the table.

Draw, subdivide, erase, visualize.

How many rows? Inches in each row? Groups of 3 in each row? Groups of 4? Groups of 6?

A square foot of flooring cost $12. What is the cost of 12 square inches?

3 square inches cost $30. How much will 24 square inches cost. 48 square inches? 15 square inches? 18 square inches?

What is the ratio of 24 square inches to 3 square inches?

What is the ratio of 12 square inches to 72 square inches?

What is the ratio of 6 square inches to 18 square inches?

How many square inches in a square foot?

How many square inches in ½ of a square foot?

How many inches around a square foot?

24 square inches of paper cover 1 book. How many books will 72 square inches cover?

Ratio of 72 sq. in. to 24 sq. in. = 3. 3.1's = 3.

72 square inches of paper will cover 3 books. How many square inches will cover 1 book? 4 books?

120 square inches of cloth are required to make 4 doll dresses. How many square inches will be required for 6 doll dresses?

How many groups of 12 square inches in a square foot?

How many groups of 6 square inches in a square foot?

How many groups of 24 square inches in a square foot?

How many groups of 3 square inches in a square foot?

6 square inches is what part of 12 square inches?

3 square inches is what part of 12 square inches?

2 square inches is what part of 12 square inches?

1 square inch is what part of 12 square inches?

12 square inches is what part of 24 square inches?

8 square inches is what part of 24 square inches?

8 square inches is what part of 12 square inches?

16 square inches is what part of 24 square inches?

One square foot of zinc costs 72 cents. What is the cost of 3 square feet?

5 square feet of tiling costs $80. What is the cost of 10 square feet? 1 square foot?

In one square foot are 144 square inches. How many square inches in 2 square feet? In 3 square feet? In 4 square feet? In 5 square feet?

How many square inches in ½ of a square foot? In ¼ of a square foot? In ⅓ of a square foot?

Visualize cards 1 square foot, ½ square foot, ¼ square foot, ⅓ square foot, 1/12 square foot, and state ratios and relations, as,—

The red card contains a square foot.
The blue card contains half of a square foot.
The red card is twice as large as the blue card.
The ratio of the red card to the blue card is 2.
The ratio of the blue card to the red card is ½.
The green card is half as large as the blue card.
The green card contains ¼ of a square foot.
There are 36 square inches in ¼ of a square foot.
The ratio of the red card to the green card is 4.
The ratio of the blue card to the green card is 2.
The ratio of the green card to the red card is ¼.
The ratio of the green card to the blue card is ½.
The yellow card is ⅓ as large as the red card.
The white card is 1/12 as large as the red card.
The white card contains 12 square inches.
The yellow card contains 48 square inches.
The white card is ¼ as large as the yellow card.
The ratio of the yellow card to the white card is 4.

Draw a square foot. Draw two square feet side by side. Draw three square feet in a straight row. Draw a second row beneath this. Draw a third row beneath this. Measure the sides with a yard stick.

A figure a yard long and a yard wide equals a square yard. Measure a square yard on the floor, on the wall, on the blackboard, on the table.

Draw with rulers and subdivide. Draw free-hand, subdivide, measure. Experiment many times.

Make a diagram of square yards, subdivide into square feet. Visualize. Erase.

How many square feet in each row? How many square feet in two rows? In three rows? How many square feet in a square yard? What is the ratio of 1 square foot to 9 square feet?

What is the ratio of 3 square feet to 9 square feet? What is the ratio of 6 square feet to 9 square feet? What part of 9 square feet is 1 square foot? What part of 6 square feet is 3 square feet? What is the ratio of 1 square foot to 3 square feet? 3 square feet to 1 square foot?

Draw figures representing 1 yard, ½ yard, ¼ yard, ⅛ yard? Compare. Visualize.

What is the ratio of ¼ yard to 1 yard? 1 yard to ¼ yard?
What is the ratio of ¼ yard to ½ yard? ¼ yard to ⅛ yard?
What is the ratio of ⅛ yard to ¼ yard? To ½ yard? To 1 yard?
What is the ratio of ½ yard to 1 yard? To ⅛ yard? To ¼ yard?
What is the ratio of 1 yard to ¼ yard? To ½ yard? To ⅛ yard?
What is the value of ½ yard of carpet, when a yard is worth $1.50? (Ratio of 1 to ½.)
What is the value of ¼ yard? ⅛ yard? ¾ yard? ⅜ yard?
How many eighths in ½ yard?
⅛ of a yard of cloth cost 10 cents; what will ½ yard cost?
How many fourths in ½ yard?
½ yard cost 50 cents. What will ¼ yard cost?

A square foot of oilcloth is worth 20 cents. Find the cost of 2 square feet. 3 square feet. 7 square feet.

A man can shingle 1 square yard of roofing in 1 hour. How much can he shingle in ½ hour? ¼ hour? ⅓ hour? How many square feet?

3 square feet of lead are worth $75. How much are 6 square feet worth? 9 square feet? 1 square foot?

There are 720 square inches in 5 square feet. How many square inches in 10 square feet?

There are 288 square inches in 2 square feet. How many square inches in 8 square feet? In 4 square feet?

How many feet around a square yard?

How many inches around a square yard?

Find the number of inches around your desk. Around the table, around a book. Draw rectangles and find their perimeters.

Visualize cards, blocks, surfaces, pictures, book covers, erasers, flags, and estimate their perimeters.

How many inches in the perimeter of a square foot?

How many inches in the perimeter of a square yard?

What would it cost to bind a square yard of oil cloth with binding at 2 cents a foot?

Visualize a rectangle 3 yards long, 1 yard wide. Find the cost of binding at 3 cents an inch.

How many sticks each 9 inches long, placed end to end, would be required to inclose the rectangle?

How many sticks 12 inches long would inclose it?

Visualize cards 2 inches by 6 inches, 12 inches by 3 inches, and many such dimensions. State perimeters.

Draw on the board rectangles of similar dimensions and subdivide into square inches. State number of square inches in the figures.

Distinguish between area and perimeter. Find areas of many rectangles, solid surfaces, book covers, table tops, desk tops, floor spaces, etc.

Visualize cards, covers, erasers, solid surfaces, and estimate areas.

In square feet what is the area of a rectangle 4 feet long and 2 feet wide? What is its perimeter?

What is the area of a blackboard 6 feet long and 4 feet wide? The perimeter?

Visualize cards that represent 1, ½, ¼, ⅛. Call the largest card 1 day.

What part of a day is the second card? The third card? The fourth card?

How many hours in each card?

Call the largest card 1 minute.

How many seconds in each card?

Call the largest card 1 hour.

How many minutes in each card?

What part of an hour is 15 minutes? 30 minutes?

What part of an hour is 7½ minutes?

What part of a minute is 15 seconds? 30 seconds?

What part of a day is 1 hour? 12 hours? 3 hours? 6 hours?

What is the ratio of 6 hours to 1 day? 3 hours to 1 day? 12 hours to 1 day?

What is the ratio of 15 minutes to 60 minutes? 30 minutes to 1 hour? 1 hour to 30 minutes? 15 seconds to 60 seconds? 30 seconds to 1 minute?

The earth revolves on its axis once in 24 hours. What part of the distance does it travel in 12 hours? In 6 hours?

In how many hours will it travel half way around the circle? One fourth of the way around? One third of the distance? One sixth of the distance? Illustrate each with drawings.

Standing on the earth and carried by it, we too, travel around a circle in 24 hours and return to the place we started. Illustrate with globe.

This distance we do not call feet or yards or miles, but degrees. The number of feet, yards, miles, and inches in a circle vary, but the number of degrees is always the same. There are 360° in the circle in which the earth moves in a day.

There are 360° in the circle of the ring on your finger.

Draw many circles. There are 360° in each one of them.

Have paper rings for the class. Circles about a foot in diameter, which may be folded in sections representing halves, quarters, thirds, sixths and twelfths, and the twelfths subdivided in to 24ths.

How many degrees in ½? ¼? ⅙? ⅓?

What is the ratio of 1 circle to ½ circle? 1 circle to ¼ circle? How many halves, quarters, sixths, eighths, twelfths, in the complete circle.

What is the ratio of ⅙ to 1/12? ½ to ¼? ⅓ to ⅙? ⅙ to ⅓?

How many 6ths in ½? In ⅓? How many twelfths in ½, ⅓, ⅙?

How many 12ths in ⅙? ⅓? ½?

How many degrees is ¼ circle? ¾? ⅓? ⅔? 1/12? 3/12? 5/12? 7/12?

Visualize circular cards representing 1, ½, ¼, ⅛.

Call the largest card 1 day. What shall we call the others respectively? How many hours in each of the others?

Call the cards, A, B, C, D.

Make ratios.

A man does a piece of work in 6 hours. What part of the work does he do in 3 hours?

A train travels 480 miles in 24 hours. How far does it travel in 12 hours? 6 hours? 3 hours?

I receive $24 for 6 hours work. How much should I receive for 3 hours? 12 hours? 24 hours?

A boy gathers 4 quarts of berries in 3 hours. How many quarts can he gather in 6 hours? 12 hours? 24 hours?

Weigh 1 pound of sand, ½ pound, ¼ pound, 1 ounce, 3 ounces, 5 ounces, 16 ounces.

How many ounces in 1 pound? ½ pound? ¼ pound? ¾ pound?

Weigh 1 pound of clay, paper, chalk, wood, etc.

Draw a line 16 in. long. Call it 1 pound.

Divide it into inches. Call each inch one ounce.

Mark heavily half-pound, quarter-pound.

What is the ratio of ½ pound to 1 pound?

What is the ratio of ¼ pound to 1 pound?

What is the ratio of 1 pound to ¼pound?

What is the ratio of 1 ounce to 16 ounces? To 8 ounces? To 4 ounces?

What part of 16 ounces is 8 ounces? 4 ounces? 2 ounces? 12 ounces?

How many quarter-pounds in 16 ounces? 8 ounces? 4 ounces? 12 ounces?

How many quarter-pounds in ¾ pounds? ½ pound? ¼ pound?

How many ounces in 2 pounds? 3 pounds? 4 pounds? 2½ pounds? 3½ pounds?

Visualize solids representing 1 pound. ¼ pound. ½ pound. ⅛ pound. 1 ounce. Call them A, B, C, D.

What is the ratio of A to B? To C? To D?

What is the ratio of B to A? To C? To D?

What is the ratio of C to A? To B? To D?

What is the ratio of D to A? To B? To C?

What is the ratio of 2 ounces to 8 ounces? 2 ounces to 4 ounces? 2 ounces to 12 ounces? 2 ounces to 16 ounces?

What part of 16 ounces is 1 ounce? 3 ounces? 5 ounces? 12 ounces? 15 ounces?

How many D's in A? In B? In C?

How many C's in B? In A?

How many B's in A?

D is what part of A? Of B? Of C?

C is what part of B? Of A?

B is what part of A?

At 32 cents for 8 ounces of tea, find the cost of 1 pound. Of 2 lb. 3 lb. 4 lb. 4 oz. 8 oz. 12 oz. 2 oz.

At 10 cents for ¼ lb. of candy, find the cost of ½ lb. ¾ lb. 2 lb. 4 lb. 5 lb.

How many quarter-pounds in ½ lb.? 1½ lb? 3 lb?

How many ounces in a half-pound? Quarter-pound? Two pounds?

How many half-pounds in 2½ pounds? 3 pounds? 4 pounds? 5 pounds?

Find the cost of 3½ pounds of sugar at 8 cents.

Find the cost of 2 lb. 8 oz. of tea at 50 cents a pound.

Find the cost of 3 lb. 4 oz. of coffee at 40 cents a pound.

Find the cost of 10 lb. of rice at 6 cents.

Find the cost of 8½ lb. of raisins at 15 cents.

Find the cost of 4½ lb. of currants at 12 cents.

Find the cost of ½ lb. of citron at 20 cents.

Find the cost of 5 lb. 8 oz. of wafers at 15 cents.

Find cost in numerous similar problems.

At 12 cents for a half-pound of tea, find the cost of 4½ lb.

At 8 cents for a quarter-pound of candy, find the cost of 6½ lb.

At 12 cents for three-fourths of a pound of maple sugar, find the cost of 2 lb. Make boxes representing 1 lb., ½ lb., ¼ lb. Original problems.

Material. Sand, oats or other possible material for measuring. Measures. 1 pint, quart, peck, bushel.

Find pints in quart, quarts in peck, pecks in bushel.

How many pints in 1 quart? In 2 quarts? 3 quarts? 5 quarts? 6 quarts? 7 quarts? 8 quarts?

How many quarts in 1 peck? 2 pecks? 3 pecks? 4 pecks?

How many pecks in 1 bushel? 2 bushels? 3 bushels? 4 bushels?

Fix the knowledge of pints, quarts, pecks and bushels with many drills.

What is the ratio of 1 pint to 1 quart?

What part of 1 quart is 1 pint?

What is the ratio of 1 quart to 1 pint?

How many pints in 1 quart?

A pint of seed is worth 4 cents; what is a quart worth? A pint of seed is worth 20 cents; what is a quart worth?

A quart of berries cost 12 cents. How much must be paid for a pint?

A quart is what part of a peck?

How many quarts in a peck?

How many pints in a peck?

What is the ratio of 1 quart to 1 peck?

What is the ratio of 1 pint to 1 peck?

How many quarts in a half-peck?

How many pints in a half-peck?

How many pecks in a bushel?

How many quarts in a bushel?

Measure.

What is the ratio of a peck to a bushel?

What is the ratio of a quart to a bushel?

What is the ratio of a quart to a half-bushel?

Imagine the sand to be potatoes, onions, apples, wheat, carrots, oats, beans, etc., and make many problems, finding cost of various quantities.

Visualize solids representing bushel, peck, quart, pint.

Call them A, B, C, D.

Ratio of A to B = ? A to C = ? A to D = ?

What is the ratio of B to C? To D? To A?

What is the ratio of C to D? To A? To B?

What is the ratio of D to A? To B? To C?

D is what part of A? Of B? Of C?

C is what part of B? Of A?

C is what part of D?

How many times is D contained in A? In B? In C?

How many times is C contained in A? In B?

How many times is B contained in A?

D is worth $100. What is the value of A? Of B? Of C?

C is worth 20 cents. Find the value of each of the others.

D is worth $1. Find the value of each of the others.

D is worth 60 cents. Find the value of each of the others.

½ of D is worth 10 cents. Find the value of each of the others.

⅓ of B is worth 20 cents. Find the value of each of the others.

Two A's are worth $4. Find the value of each of the others.

What is the sum of A and B? C and D? In pints?

What is the sum in quarts of A and B and C?

What is the sum of 2 A's and 2 B's?

What is the difference between A and B in quarts? In pints? In pecks?

What is the difference between C and D in pints? In quarts?

D is what part of A? How many times D is A? How many times C is A?

A will contain B how many times? C? D?

Divide A among 8 children. How many will each child receive?

Divide A among 4 boys. How much will each boy receive?

Divide C among 4 boys. How much will each boy receive?

A, B, C and D are four measures of hickory nuts.

If ¼ is taken from each, how much remains?

A, B, C and D are filled with berries. If half of each measure is sold, how much remains?

A, B, C and D are filled with crab apples. How many pecks in all? How much over?

The measures are ⅓ filled with corn. How much in all?

Four A's will contain how many B's?

Three B's will contain how many D's?

2½ C's will contain how many D's?

10 B's will contain how many A's?

Add 3 B's and 2 A's.

Add 2 B's and 2 C's.

Add 4 D's and 2 C's.

Add 3 D's and 1 C.

Add A and 2 B's and 4 C's and 8 D's.

From A take C and D.

Visualize gallon, quart, pint, gill, by the use of representative solids. Call them A, B, C, D.

What is the ratio of A to B? A to C? A to D?

What is the ratio of B to C? B to D? B to A?

What is the ratio of C to D? C to A? C to B?

What is the ratio of D to A? D to B? D to C?

How many D's in C? C's in B? B's in A?

What part of A is B? C? D?

What part of B is C? D?

What part of C is D?

C is worth 20 cents. Find the value of A. Of B. of D.

B is worth 40 cents. Find values of A, C, D.

D is worth $100. Find the value of A, B, and C.

How much are A and B and C and D in pints? In gills?

How much in quarts and pints?

How much are B and C and D in gills?

How much are A and B? 2 A's and 2 B's?

2 A's and 3 B's and C?

2 A's less 2 B's = ?

Call A, B, C and D measures filled with milk. How many pints in all? Gills?

How many gills in C and D? B and C?

How many pints in A? A and B?

How many pints in 2 B's? 2 A's? 8 D's?

How many A's in 20 D's? 10 B's? 10 C's?

How many D's in ½ of A? ¼ of A? ½ of B? ½ of C?

How many C's in A? In 2 A's? In 3 A's?

A, B, C and D are jars of vinegar from which one-half has been sold. How much remains? How much is it worth at 4 cents a gill?

A, B, C, and D were filled with cream, but D and half of C were sold. How much remained?

A, B, C and D were half full of oil. The grocer sold D and filled B. How much oil was there then in the jars?

Cream is 20 cents a pint. Find the cost of 1 gallon.

Milk is 4 cents a pint. Cost of a gallon, 2 qt. = ?

Vinegar is 12 cents a quart. Find cost of 2 quarts, 1 pint?

One jar of vinegar contains 3 qt. 1 pt. Another 2 qt. 1 pt.

What is the vinegar worth at 6 cents a quart?

A lady buys a pint, and a gill of cream on Monday, a quart on Tuesday, a pint, 3 gills on Wednesday. At 40 cents a quart, how much must she pay for the cream?

From a jug containing 1 gallon, 2 quarts of oil, 3 quarts were drawn. How many quarts remained?

From 3 quarts, 1 pint of molasses 3 gills were sold. How much remained?

Three jars each contain 1 gallon, 1 quart, 1 pint of milk. How many gallons, quarts and pints in all?

12 jars of preserves each contain 1 pint, 3 gills. How many gallons, quarts, pints in all?

How many hours in 1 day?

How many days in 1 week?

How many weeks in 1 year?

How many minutes in 1 hour?

How many seconds in 1 minute?

Draw lines representing 1 week and 1 day. Erase. Visualize.

What is the ratio of 1 day to 7 days? 2 days to 7 days? 3 days to 7 days? 4 days to 7 days?

What part of a week is 1 day? What part is 2 days? 3 days? 4 days? 5 days? 6 days?

How many 2 days in 7 days?

How many 3 days in 7 days?

How many 4 days in 7 days?

How many 5 days in 7 days?

How many 6 days in 7 days?

Draw lines representing 1 hour, 12 hours and 24 hours. Visualize. Erase.

1 hour is what part of 24 hours?

Ratio of 1 hour to 24 hours?

Ratio of 1 hour to 12 hours?

Ratio of 12 hours to 24 hours?

12 hours = what part of 24 hours? 1 hour = what part of 24 hours?

A pipe discharges 1,000 gallons of water in 24 hours. How many gallons in 12 hours?

A train travels 480 miles in 24 hours. How far does it travel in 1 hour? In 12 hours?

Give many such problems solved through ratios.

In the same way let lines represent 1 hour, 15 minutes, 30 minutes, 10 minutes. Also 1 minute, 30 seconds, 45 seconds, 10 seconds.

Discover ratios and make problems after visualizing relations.

There is another way to write tenths. 1/10 is also written .1. Write decimal tenths .1 to 1.

.1 is what part of .2? of .3? Of .4? Of .5?

.2 is what part of 1? Of .4? Of .6? Of .8?

.5 is what part of 1?

.9 is what part of 1?

Drills in decimals should not be carried beyond tenths in this grade.

What is the ratio of .1 to .8? .1 to .6? .1 to .5?

.1 is what part of .5? .1 is contained in .5 how many times?

.5 is how many times .1?

Visualize 1/10, 3/10, 4/10, 5/10. Add.

Visualize .1, .2, .4, .5. Add.

Visualize .7 less .3.

Visualize 7/10 less 3/10. Subtract.

Give many drills.

Review. In 1 how many 4ths? halves? 3rds? 6ths? 7ths? 8ths? 9ths? 10ths?

Fold strips of paper in halves, thirds, 4ths, 5ths, 6ths, 8ths, 10ths.

Divide lines into 10ths.

Count 10 balls. Take 1/10, 2/10, 3/10.

Draw lines. Erase 1/10, 2/10.

Visualize cards whose ratios are 1 and 10.

Visualize sticks whose ratios are 1 and 10.

Find objects whose relations are 1 and 10.

Cut papers whose relations are 1 and 10.

How many 10ths in 1? In ½? In ⅕?

Write 1/10, 2/10, 3/10, 4/10, 5/10, 6/10, 7/10, 8/10, 9/10, 10/10. 10/10 = 1.

Visualize 1 gal., 1 qt. 1 pt. through the use of solids, cards, circles, or other objects.

We shall call 1 gallon 100 per cent. What shall we call 1 quart? 1 pint?

What part of a gallon is 1 quart? What per cent is 1 quart of 1 gallon? What per cent is ¼?

What part of 1 quart is 1 pint? What per cent is ½?

What part of a gallon is 1 pint? What per cent is ⅛?

1 gallon is 100%, what does 1 pint equal?

1 pint then is what per cent of 1 gallon?

Visualize 1 pint and 1 gill.

Call 1 pint 100%.

What shall we call 1 gill?

What per cent, then, is 1 gill of 1 pint?

¼ is equal to what per cent?

Visualize 1 pound, ½ pound, ¼ pound.

Call 1 pound 100%. What shall we call ½ pound?

½ pound is what per cent of 1 pound?

What shall we call ¼ pound?

¼ pound is what per cent of 1 pound?

Visualize 1 yard. 1 foot.

Call 1 yard 100%.

What shall we call 1 foot?

One foot is what part of 1 yard?

What per cent, then, is ⅓?

What per cent is 1 foot of 1 yard?

Visualize 1 hour, ½ hour, ¼ hour.

Call 1 hour 100%.

What shall we call ½ hour? ¼ hour?

What per cent of 1 hour is ½ hour? 30 minutes is what per cent of 1 hour?

What per cent of 1 hour is ¼ hour? 15 minutes is what per cent of 1 hour?

REVIEW

1. How many square feet in a piece of oilcloth 8 feet wide and 12 feet long? If the tacks are placed 6 inches apart, how many tacks will be used around it?
2. How many square yards in a floor 12 feet long and 6 feet wide? How many feet around it?
3. At 5 cents a pint, what will a gallon and a half of milk cost?
4. I spent $1.50 for cloth, $.50 for lace and $.63 for lining. How much change should I receive from a five-dollar bill?
5. What per cent of a bushel is 2 pecks?
6. How many quarts in 25% of a peck?
7. How much is 10% of 15 dollars?
8. How much is 5% of $1? Of $3? Of $5?
9. How much is 50% of $300?
10. How much is 12½% of $80?
11. How much is 75% of $200?
12. How many ounces in 5 lb. 3 oz. of pepper?
13. How much must I pay for 2 lb. 8 oz. of mustard at 2 cents an ounce?
14. At 15 cents a dozen, what will a gross of clothespins cost?
15. At 3 cents a foot, what is the value of 3 yards, 2 feet of molding?
16. At 5 cents an inch, how much must I pay for 3 feet, 5 inches of molding?
17. What will 5½ pounds of tea cost at 60 cents a pound?
18. At 12 cents for 3 pounds, what will 15 pounds of rice cost?
19. At 40 cents for 12 pounds, what will 36 pounds of prunes cost?
20. At 75 cents for 8 dozen, what will 24 dozen of picture hooks cost?
21. At 15 cents for 5, what will 25 plums cost?
22. At 10 cents for 3, what will 3 dozen oranges cost?
23. At 2 for 5 cents, what will 3 dozen apples cost?
24. What is the perimeter of a figure 4 feet, 3 inches long and 2 feet, 11 inches wide?
25. What is the area of a piece of land 30 feet long and 20 feet wide? What is the perimeter?
26. If I buy apples for $.20, pears for $.65, cherries for $.90, how much change should I receive from a $2.00 bill?
27. What is the sum of .9, .3, .7, .6 and .5?
28. How long is it from 9 a. m. to 12 m.?
29. How many hours from 6:30 p. m. to 12 m.?
30. How many hours from 6:30 p. m. to 1:30 p. m.?
31. How many hours from 7:30 a. m. to 7:30 p. m.?
32. How many hours from 8:30 a. m. to 1:30 p. m.?
33. How many hours from midnight to 4:30 p. m.?
34. How many degrees in a half-circle? A quarter-sircle?
35. How many inches in 5½ feet? 3½ feet?
36. How many hours in 2½ days? 4½ days?
37. How many ounces in 5½ lb.? In 3½ lb.? In 10 lb.? In 4½ lb.?

38. A man can do a piece of work in 8 days. In how many days can two men do it?
39. A man does a piece of work in 16 days. In how long a time can 4 men do it?
40. A man does a piece of work in 40 days. In how many days can 8 men do it? 5 men? 10 men?
41. A man earns $40 in 10 days. How much does he earn in 1 day? In 2 days? In 3 days?
42. A girl spends $20 in 4 days. How much does she spend in 1 day? In 2 days?
43. A boy earns 12 cents a day. How much does he earn in 2 weeks?
44. A boy spends 8 cents a day and saves 4 cents. How much does he save in 15 days? How much does he spend?
45. 8 boys earn 64 cents. How much is that for each boy?
46. 9 men earn $81. How much apiece do they earn?
47. How many inches in a yard? In a half-yard? In a quarter-yard? In an eighth-yard?
48. An eighth of a yard of silk is worth $.25? How much is half of a yard worth?
49. A quarter of a yard of lace is worth 60 cents. How much is a yard and a half worth?
50. A half-yard of carpet is worth $.75. What are 2 yards worth?
51. An inch of metal is worth 10 cents. How much is a yard worth?
52. How much is ¼, ½ and ⅛?
53. How much is ⅓, ⅙ and 1/12?
54. How much is 5/12 less ⅙?
55. How much is 9/10 less ⅕?
56. What is the ratio of 1 and ½? 1 and ¾?
57. What is the ratio of 1 and 25?
58. What is the difference between 5/10 and 2/5?
59. A man saves $.25 a day. How long will it take him to save $3.50?
60. How many six-gallon jugs can be filled from a keg containing 72 gallons?
61. Of a class of 45 boys, 1/9 are absent. How many are present?
62. At 3 for 1 cent, what will 18 apples cost?
63. At 4 for a cent, how many apples can be bought for 11 cents?
64. When 4 lb. of sugar cost 15 cents, how much will 20 lb. cost? 24 lb.? 32 lb.?
65. What will 15 yards of lace cost at 9c a yard?
66. What will 18 lb. of sugar cost at 7 cents a pound?
67. What will 1 lb. of candy cost when 5 lb. cost 90 cents?
68. At $8 a week, how many weeks can I board for $64?
69. What will ⅛ of a pound of candy cost at $.64 a pound?
70. How many weeks in 63 days?
71. How many pecks in 48 quarts?
72. How many bushels in 88 pecks?
73. How many quarts in 36 pints?
74. How many twentieths in 1? In ½? In ¾?
75. How many twelfths in 1? In ½? In ¾? In ⅙?
76. How many 15ths in 1? In ⅓? In ⅔? In ⅕?
77. How many 25ths in 2? In 3? In 4/5?
78. How many 30ths in 1? In 2? In ½? In ⅓? In ⅙? In ⅕? In 4/5? In 5/6? In ⅔?

79. I have a dollar, a fifty-cent piece, a quarter, a nickel and a dime. How much have I?
80. How much is ⅔ and ½? ¾ and ½? ⅚ and ½? ⅜ and ½? 7/12 and ½?
81. How much is ⅚ and ⅓? 7/12 and ⅓?
82. How much is 1/9 and ⅓? 7/9 and ⅔?
83. How much is ⅘ and 11/25?
84. How much is ⅞ and ¾?
85. How much is 9/10 and ⅗? 7/10 and ½?
86. How much is ⅜ and ¾?
87. How many hours in ⅜ of a day? Minutes in ¾ of an hour?
88. How many seconds in 7/12 of a minute?
89. What is the difference between ¾ of an hour and ⅔ of an hour?
90. What is the difference between 11/12 of a day and ⅚ of a day?
91. What is the difference between ⅞ of a day and ½ of a day?
92. What is the difference between 5/12 of a foot and ¼ of a foot?
93. I have 5 dollars and spend ½ of it for shoes, ⅕ of it for a cap and 1/10 of it for mittens. How much have I left?
94. I spend ⅝ of $4.00 for a book. How much have I left?
95. I waste ⅙ of my time. How much do I not waste?
96. I wrote 7/12 of my lesson. What part of it did I not write?
97. I lost 23/25 of my money. How much did I not lose?
98. I have a garden 20 feet by 16 feet. How many feet of fence will go around it?
99. If I set posts four feet apart, how many posts shall I require?
100. If I build a 3 board fence, how many feet of boards shall I require?
101. If I write 20 lines every school day, how many lines shall I write in a month?
102. What will 2¾ lb. of rice cost at 8 cents a pound?
103. If you earn 15 cents a day, how long will it take you to earn $1.00?
104. If I pay 5 cents a year for the use of one dollar, what shall I pay for the use of $5?
105. If I pay 6 cents a year for the use of one dollar, what shall I pay for the use of five dollars? 10 dollars? 8 dollars?
106. ⅔ of a foot and ¼ of a foot are how many inches?
107. What will 2 dozen lead pencils cost at the rate of 2 for 5 cents?
108. After selling ⅓ of his papers a newsboy had 12 papers left. How many had he at first?
109. What numbers multiplied together produce 56, 63, 81, 144, 42, 60, 16, 40, 72, 99, 88, 45, 54, 64, 27, 35, 36?
110. Find the cost of: 62 books at $6. 38 chairs at $4. 52 desks at $6. 75 tons at $4. 81 yards at $4. 132 feet at $3.
111. How many yards in 21 feet? In 54 feet?
112. How many pints in 11 quarts? Gallons in 15 quarts? Gallons in 32 quarts? Pints in 9 quarts?
113. How many feet in 9 yards? In 40 yards? In 16 yards? In 42 yards?
114. If you attend school 5½ hours in a day, how many hours is that in a week?

BULLETIN NO. 46

STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

ARITHMETIC

PREPARED BY MISS SARA M. NICHOLSON, COUNTY NORMAL SUPERVISOR.

FOURTH GRADE

In the fourth grade the ideas of relations of time, space, distance, value, form, etc., which have been brought into use in the preceding grades are made the basis of problems involving new conditions, numbers and relations. The cubic inch, cubic foot, ton, hundred weight, are developed. Fractional parts to fiftieths, decimals including tenths and hundredths, percentage including the aliquot parts, tenths, fifths, halves, fourths and eighths and U. S. money are made the basis of a part of the drill work and general principles.

Each new principle is carefully developed through objects, relations of quantities, each to each, estimated and established. There should be many reviews and much drill in fixing ideas that have been developed.

Materials: Artificial coins, colored sticks, colored blocks, squares, cubes, cylinders, spheres, cones, prisms, colored cards, beans, corn, sand, clay, measures (gill, pint, quart, peck, bushel), foot rulers, yard stick, scales.

Read and write numbers to 1,000,000. Roman numerals. U. S. money. Add, subtract, multiply and divide in visualizing problems.

Fractions 1/2, 1/3, 1/4, 1/5, 1/6, 1/7, 1/8, 1/9, 1/10. Denominate numbers. Review all measures and tables. Learn to find areas. Add, subtract, multiply and divide. Reduce.

In fractions change halves to fourths, sixths, tenths, etc.; thirds to ninths; fifths to tenths; etc.

Visualize daily: 216
142
325
124 Increase in length.

From 2076
take 1235

Multiply 142 by 9.

176
×11

125
×12

489
×10

Divide

125
———
5

146
———
7

2025
———
8

Add

qt.	pt.
3	1
4	1

From 2 gal.
take 3 qt.

$$\frac{1\text{ gal.} — 2\text{ qt.}}{2}$$

7 times 1 gal. 1 qt. 1 pt.

Add $185.50
32.25
16.40

Subtract $175.50
29.37

Multiply $610.50
4

Divide $\frac{42}{10}$ $\frac{328}{4}$

Show blocks whose ratios are 1, 3, 5. Call them, A, B, C.

What is the ratio of A to B? B to C? A to C? How many A's in B?

What is the ratio of B to A? A is 50c. What is B? What is C?

C is 30 yd. What is B? What is A? C is $1.20. What is A? What is B?

C is 35 yd. of ribbon at 10c a yd. What is A? What is B?

B is 24 lemons. What is A? What is C? C is 20 lb. of candy. What is A? What is B? B is 15c. What is A? What is C? A is a house worth $6,500. What is A? What is B?

In the same way show blocks whose ratios are:
1, 4, 6; 1, 3, 6; 1, 3, 4; 1, 6, 12; 1, 2, 4, 8; 1, 12; 1, 5, 10; 1, 2, 5; 1, 9; 1, 7; 1, 10; 1, 8.

Make constant use of the measures. Use the rule to find perimeter of desk, table, blackboard, door. How many inches around the table?

How many feet? Yards? How many inches around the desk? How many feet? Find the cost of molding for the room at 2c a foot.

Draw a square 6 in. by 6 in. Divide it into square inches. How many inches in a row? How many rows? How many square inches?

Draw a square 1 ft. by 1 ft. Divide it into square inches. How many inches in a row? How many rows? How many square inches? A square 12 inches long and 12 inches wide is a square foot. Measure 3 sq. ft. Measure 3 rows of 3 sq. ft. each. This is a square yard. How many sq. ft. in a sq. yd.? How many sq. ft. in 2 sq. yd.? Draw a sq. yd. on the floor. What is the perimeter of a sq. yd.? Draw two sq. yd., three. What is the perimeter? The area? How many sq. in. in a sq. yd.? How many sq. in. in 1/2 sq. yd.? 1/4? 1/3? How many sq. ft. in 1/3 of a sq. yd.? How many sq. in. in a paper 12 in. by 12 in.; 9 in. by 7 in.; 8 in. by 6 in. 16 in. by 10 in.; 14 in. by 7 in.; 20 in. by 9 in.? Find the perimeter of each.

How many sq. ft. in 4 1/3 sq. yd.? In 5 1/3 sq. yd.?

How many sq. yd. in 108 sq. ft.? In 206 sq. ft.?

Measure a peck of corn. How many quarts? How many pints? How many pecks in a bushel? How many pints in a peck? In a bushel? In a quart? In 2 pk.? How many pecks in 42 pt.? In 36 qt.? In 7 bu.? How many pints in 9 pk.? In 4 qt.? In 7 bu.? In 14 gills?

Measure the door. Find area in square feet. Measure the window. Plan a garden. Measure and assign spaces for flower beds. Plan a house and yard. Measure. Measure the school walk, the hall, the dressing room. Find areas.

A block 1 inch long, 1 inch wide and 1 inch thick is a cubic inch. Build up a cubic foot with inch cubes. How many blocks long? How many blocks wide? How many blocks high? How many blocks in a row? How many rows in a square? How many squares high?

If a cube is 2 in. long, 3 in. wide and 4 in. high how many cubic inches does it contain? How many cubic inches in a block 3 in. by 2 in. by 2 in? Build many cubes to find number of cubic inches. Give problems, as, find the number of cubic inches in a book 12 in. long, 8 in. wide and 2 in. thick. Find the number of cubic inches in a block 7 in. long, 5 in. wide, 3 in. thick.

In the abstract drill work the work in addition becomes the three-column sum, short at first and increased gradually in length.

816
425
327
415

In subtraction visualize numbers, as

8146	4167	1657
3257	2083	921

keeping the numbers used below 10,000.

Divide	180	175	326	728	196	140	726	480	725	321
	12	5	4	3	5	2	8	12	9	8
Multiply		206	184	725	806	913	724	165	728	408
		9	3	8	11	12	8	9	3	12

Increase problems to include 12 as divisor of four-figure dividends. All multiplication combinations including 12 × 12 should be completed and used. Speed should increase daily.

Visualize.

Add	$2.75	$3.75
	1.83	5.15
	6.50	6.20
	4.49	7.48
	7.28	1.25

Subtract	$10.00	$81.50	$100.00
	1.75	21.25	50.50
	$32.50	$74.50	$28.50
	16.25	25.30	14.12

Add	qt.	pt.
	3	1
	4	1

From 2 gal.
take 3 qt.

$$\frac{1 \text{ gal.} — 2 \text{ qt.}}{2}$$

7 times 1 gal. 1 qt. 1 pt.

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1, 4, 6; 1, 3, 6; 1, 3, 4; 1, 6, 12; 1, 2, 4, 8; 1, 12; 1, 5, 10; 1, 2, 5; 1, 9; 1, 7; 1, 10; 1, 8.

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Visualize.

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	1.83	5.15
	6.50	6.20
	4.49	7.48
	7.28	1.25

Subtract	$10.00	$81.50	$100.00
	1.75	21.25	50.50
	$32.50	$74.50	$28.50
	16.25	25.30	14.12

Multiply	$.15	$.20	$.35	$.42
	12	8	9	11

Divide	$1.80	$2.40	$3.75	$4.80	$7.20	$3.50
	15	4	5	4	6	2

Merely place the decimal point, mentally, above the point in the dividend.

I.

Arrange one-inch cubes in a block 2 by 2 by 2.
How many cubic inches in the block?
Each cubic inch is what part of the block?
How many eighths in 1?
1 is what part of eight? 2 is what part of eight?
2/8 is the same as what? 4/8?

II.

Arrange blocks 2 by 2 by 4.
Each block is what part of the whole?
How many sixteenths in all? In 1/2? In 1/4? In 1/8?
What is the ratio of 1 block to 16 blocks? 1 block to 8 blocks?
8 blocks to 16 blocks? 4 blocks to 16 blocks?
Select 3/16, 5/16, 9/16, 11/16, 15/16.
Find sums and differences.
How many 3/16 in 15/16?
How many 5/16 in 15/16?
Use objects.
How many 2/16 in 16/16?
How many 4/16 in 12/16?
How many 11/16 in 16/16?
How many 10/16 in 16/16?

III.

Draw rectangles. Divide into eighths; sixteenths. Visualize.
How many sixteenths in 1/8? In 4/8? In 5/8? In 10/8? In 8/8?
How many eighths in 1? In 2? In 5? In 10?
How many eighths in 1/4? In 1/2? In 3/4?
How many sixteenths in 1/2? In 3/4? In 1/4? In 3/8? In 5/8?
What is the sum of 3/8 and 3/16? 5/8 and 5/16?
What is the sum of 7/8, 1/4 and 1/2?
What is the sum of 3/8, 1/4 and 1?
What is the difference between 1/2 and 1/4? 3/8 and 3/16? 5/8 and 5/16? 9/8 and 3/4?
What is the difference between 12/8 and 1/2? 11/16 and 1/2? 1 1/2 and 3/8? 3/4 and 5/16?

IV.

Draw circles. Divide into thirds.

Arrange 9 blocks, 3 by 3.

Divide into thirds; into ninths.

How many ninths in 1/3? In 2/3? In 3/3?

How many thirds in 1? Ninths in 1?

Draw a rectangle 3 by 3.

Subdivide into eighteenths.

How many eighteenths in 1? In 1/2? In 1/3? In 1/6? In 1/9?

How many eighteenths in 2? In 3? In 4? In 5?

What is the ratio of 1/18 to 1? 1/18 to 1/9? 1/18 to 1/2? 1/18 to 1/3? 1/18 to 1/6? 1/18 to 2/3?

What is the sum of 1/18 + 3/18 + 2/9? 1/2 + 5/18? 1/3 + 7/18? 2/3 + 6/18? 5/9 + 1/18 + 1/3? 1/6 + 1/3 + 1/18?

V.

Draw a rectangle and divide it into 7 equal parts. Divide each part into 3 equal parts. What is each of the small parts called? How many twenty-firsts in 1/7? In 2/7? In 3/7? In 4/7? In 5/7? In 6/7? In 7/7? In 2? In 3? In 4? In 6?

Divide lines into 21 equal parts.

Visualize.

What is the ratio of 1/21 to 1? To 3/21? To 7/21? To 11/21?

What is the ratio of 1 to 1/21? To 3/21? To 7/21?

What is the sum of 9/21, 2/3 and 3/7? 5/21, 2/3 and 1/7? 9/21, 2/3 and 3/7? 11/21, 2/3 and 1/7? 5/21, 1/3 and 4/7? 11/21, 2/3 and 1/7?

VI.

Divide a rectangle into 5 equal parts.

Divide each part into 4 equal parts.

Each part is called what?

How many twentieths in 1/5? In 1/4? In 1/10? In 4/5? In 3/10? In 6/10? In 1/2? In 3/4?

Draw lines. Divide into halves, fifths, tenths, twentieths.

How many twentieths in 2? 3? 4? 5?

What part of 1/10 is 1/20? What part of 1/5 is 1/20? What part of 1/4 is 1/20? What part of 3/4 is 1/20?

What is the ratio of 1/20 to 1? 1/20 to 5/20? 1/20 to 10/20?

What is the ratio of 1 to 1/20? 1 to 2/20? 1 to 3/20?

What part of 10/20 is 1/20? What part of 8/20 is 2/20? Of 6/20 is 3/20? Of 9/20 is 3/20?

VII.

What is the sum of 4/20, 6/20, 11/20 and 3/4?

What is the sum of 1/20, 1/4, 1/2 and 3/8?

What is the sum of 5/20, 1/2, 1/4 and 5/8?

What is the sum of 3/20, 5/20, 1/8 and 3/4?

What is the difference between 11/20 and 1/4? 20/20 and 3/4? 9/20 and 3/10? 7/20 and 1/5? 1 11/20 and 3/4? 17/20 and 3/10?

How much is 3/8 × 1/2? 3/8 × 1/3?
How many 2/20 in 18/20? 3/20 in 20/20? 17/20 in 20/20?
How many 4/20 in 5? 3/20 in 2? 6/20 in 4?
How many 7/20 in 1/2? In 3/4?

VIII.

Divide a circle into 5 equal parts.
Divide each part into 5 equal parts.
Divide lines into 5 equal parts.
Divide each part into 5 equal parts.
Each part is called what?
How many twenty-fifths in 1? In 2? In 3? In 4?
How many twenty-fifths in 1/5? In 2/5? In 3/5? In 4/5?
How many times 1/25 is 1/5? 2/5? 3/5? 4/5?
How many twenty-fifths in 1/10?
What is the ratio of 1/25 to 2/25? To 25/25? To 20/25?
What is the ratio of 2/25 to 1/25? 25/25 to 1/25?
What is the sum of 9/25, 4/25, 3/25 and 7/25?
What is the sum of 4/5, 3/10 and 11/25?
What is the sum of 9/25, 3/5, 7/10 and 5/25?
What is the sum of 6/25, 1/5 and 7/10?
From 25/25 take 19/25, 6/25, 4/25, 11/25.

IX.

From 3 take 11/25, 7/25, 9/25, 8/25.
From 2 take 6/25, 1 1/25, 3/25, 1 1/5.
From 30/25 take 4/5. From 9/25 take 1/5?
How many twenty-fifths in 3? In 4? In 2 1/2?
How many 3/25 in 25/25?
How many 4/5 in 25/25?
How many 5/25 in 25/25?
In 21/25 are how many 2/5? 3/5?
1/25 × 2/5 × 1/2 × 2/3 = ? 24/25 × 1/2 × 3/4 × 5/4 = ?
7/8 × 2/3 × 5/4 × 1/2 = ?

Visualize.
1/5 + 4/5 + 7/5 + 8/5 = ? 9/10 + 3/5 = ? 7/12 + 2/3 = ?
4/20 + 1/2 = ? 16/20 − 1/2 = ? 25/25 − 3/5 = ? 4/5 − 1/2 = ?
7/8 − 3/4 = ? 1/2 × 2/3 = ? 1/4 × 4/8 = ? 25/5 = ? 30/6 = ?
17/8 = ? 21/3 = ? 50/4 = ? 60/3 = ? 75/25 = ?

XI.

Add		Subtract		
4 1/2	5 2/3	10 3/4	4 7/8	5 5/6
1 1/3	3 1/2	5 1/2	2 1/4	1 1/3

XII.

Visualize.

Multiply

3/9 by 9; 3/8 by 2; 3/8 by 24; 9/27 by 9; 3/25 by 5; 7/8 by 4; 6/10 by 5; 7/8 by 4; 6/7 by 7; 3/5 by 10; 11/12 by 4; 3/7 by 14; 3/9 by 18; 6/25 by 5; 2/8 by 24; 16/25 by 5; 4/9 by 3; 2/11 by 22; 7/8 by 6; 9/10 by 5; 8/12 by 6; 3/8 by 9; 40/50 by 25; 27/6 by 3.

XIII.

What numbers will contain, without a remainder,

5 and 7?
11 and 3?
4 and 10?
6 and 8?
4 and 9?
7 and 2?
5 and 3?
2 and 8?
9 and 12?
2, 9 and 5?
3, 2 and 5?
7, 3 and 6?
8, 3 and 2?
9, 3 and 2?
4, 5 and 2?
7, 6 and 2?
8, 5 and 3?
4, 1 and 6?

XIV.

Write 1/10 as .1.

This is merely another way of writing 1/10.

Write 5/10 as .5.
Write 2/10 as .2.
Write 3/10 as .3.
Write 4/10 as .4.
10/10 = 1.
Write 6/10 as .6.
Write 7/10 as .7.
Write 8/10 as .8.
Write 9/10 as .9.

XV.

Write 1/100 as .01. Write 2/100 as .02, etc., to 100/100. Explain that .01 and 1/100, etc. are identical.

XVI.

Review fraction lessons on 10ths and 100ths.

XVII.

Sometimes one-hundredth is written 1%, and called one per cent. 2/100 = 2%.

Write from dictation, per cents to 100.
How much is 1/100 of a bundle of 100 sticks?
How much in .01 of a bundle of 100 sticks?
How much is 1% of a bundle of 100 sticks?

XVIII.

How much is .02 of 600?
How much is 2/100 of 600?
How much is 2% of 600?
How much is 3/100 of 300?
How much is .03 of 300?
How much is 3% of 300?

How much is 5/100 of 250?
How much is .05 of 250?
How much is 5% of 250?
How much is 4% of 100?
How much is 5% of 100?
How much is 6% of 100?
How much is 7% of 100?
How much is 8% of 100?
How much is 10% of 100?
How much is 50% of 100?
1/100 = .1 = 1%.
2/100 = .2 = 2%.
50/100 = .50 = 50% = 1/2.
25/100 = 1/4 = .25 = 25%.
Dictate per cents to be written as fractions and decimals: 20%, 50%, 10%, 25%.

XIX.

Visualize.
Give multiples of 5 and 7; 11 and 3; 4 and 10; 2, 4 and 8; 7, 3 and 4; 3, 4 and 7; 5, 10 and 7; 6 and 8; 4 and 9; 7 and 2; 10 and 5; 9 and 6; 7 and 9; 11 and 9; 7 and 16; 9 and 12; 6, 3 and 7; 2, 9 and 5; 2, 5 and 6; 3, 2 and 5; 5, 2 and 8; 7, 3 and 6; 9, 3 and 2; 8, 3 and 3.

XX.

Visualize.
8% of 25; of 32; 16; 40; 25; 100; 28; 90; 31; 42; 60.
10% of 18; of 12; 200; 150; 160; 380; 270; 145; 280; 165; 200; 240.
5% of 80; of 60; 30; 12; 100; 220; 330; 450; 720; 160; 580; 420; 160.

XXI.

Visualize.
What is the ratio of 2 lb. to 4 lb.? 5c to 15c? 1 gal. to 1 pt.? 1 qt. to 1 gal.? 6 in. to 2 1/2 ft.? 2 1/2 lb. to 1 lb.? 5/6 to 1/3? 1/2 to 3/8? 2/5 to 3/5? 1 gal. 2 qt. to 2 qt.? 2 yd. to 1 yd. 1 ft.? 1 oz. to 1 lb.? 1 pt. to 1 qt.? 1 pt. to 1 gal.? 18 in. to 2 yd.? 1 doz. to 1 gross? 2 doz. to 1 gross? 3 doz. to 1 gross? 4 doz. to 1 gross?

XXII.

What is the ratio of 1 month to 1 year? 12 weeks to 48 weeks? 52 weeks to 1 month? 16 in. to 2 yd.? 12 in. to 3 ft.? I foot 9 inches to 1 yard? 5 lb. to 15 lb.? 75 cents to $1.50? 10 cents to $3.00? .1 to .9? .3 to .7? .4 to .8? .01 to .1? .01 to .5? .06 to .18? .03 to .09? .12 to .15? .10 to .20? .30 to .60?

XXIII.

In a yard are 100%. What % in a half yard? 1/3 of a yard? 1/4 of a yard? 1/5 of a yard? 1/8 of a yard?

In a pint are 100%. What per cent in 1/2 of a pint? 1/3 of a pint? 1/4 of a pint? 1/5 of a pint? 1/8 of a pint?

In a day are 100%. What per cent in 1/2 of a day? 1/3 of a day? 1/4 of a day? 1/5 of a day? 1/8 of a day?

In a square are 100%. What per cent in 1/2 of a square? 1/4 of a square? 1/3 of a square? 1/8 of a square? 1/5 of a square?

$300 is a man's salary for a month.

$300 is 100% or the whole of his salary. What per cent is 1/2 of his salary? 1/3 of it? 1/4 of it? 1/5 of it? 1/8 of it?

A tank contains 1000 gallons.

1000 is 100%. How many gallons in 50%? 33 1/3 per cent? 25%? 20%? 12 1/2%?

XXIV.

Visualize.

Find 1/7 of 630; 5/7 of 630; 6/7 of 630; 3/7 of 630.
Find 3/8 of 1200; 5/8 of 1200; 7/8 of 1200.
Find 2/5 of 840; 1/5 of 840; 3/50 of 840; 4/50 of 840.
Find 5/7 of 210; 4/7 of 210.

XXV.

How many hours and minutes from 8 a. m. to 6:30 p. m.?

How long a time is it from 6 p. m. to a quarter before 7 a. m.?

How long is it from 9 p. m. to 15 minutes after 8 a. m.?

How many hours does a ship sail if it is on the water from 1 o'clock a. m. until 20 minutes before 8 p. m.?

How many hours does a child spend in school from 8:45 a. m. until 15 minutes after 4 p. m.?

How many hours and minutes from ten minutes after 2 o'clock p. m. until 8 minutes of 6 a. m.?

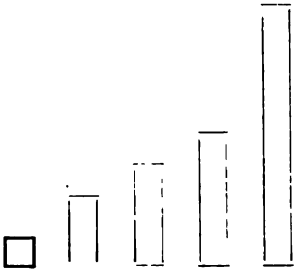
How many hours and minutes from 2:30 a. m. until 5:15 p. m.?

XXVI.

How many days from April 15 to June 18? December 9, 1894 to January 8, 1895? January 12 to February 15? June 15 to July 24? October 12 to December 1? November 1 to December 25? May 12 to June 8? August 12 to October 3? September 6 to November 8? November 12 to December 15? June 10 to July 12? April 12 to May 3? May 1 to June 15? October 3 to November 10? June 10 to July 18? February 4 to April 3? January 1 to February 28? June 10 to July 3? August 5 to November 31? October 3 to December 1? June 3 to October 1?

XXVIII.

Visualize cards representing 1, 2, 3, 4, 8.



Call 8 a bushel. What shall we call each of the others?

How many quarts in 1? In 2? In 3? In 4?

How many pints in 4? In 3? In 2? In 1?

At 2 cents a pint, what will be the value of 8, 4, 3, 2, 1?

At $1.60 for a bushel of peaches, what will be the value of 1, 2, 3 and 4?

At $3.20 for 4, what will be the value of each of the others?

At $.15 for 1, find the value of each of the others?

Call 8 a gallon. How many quarts or pints in 1, 2, 3 and 4?

At 10 cents for 2, find the value of 1, 3, 4 and 8.

At 16 cents for a half-gallon of milk, find the value of a quart, a gallon, a pint, a gill.

XXIX.

How many ounces in a pound? In a half pound? In a quarter of a pound? In an eighth of a pound?

How many pounds in a long ton? Half of a long ton? A quarter? An eighth?

How many pounds in a short ton? Half? Eighth? Quarter? Fifth? Tenth? Twentieth?

In 3/20? 7/20? 11/20? 16/20?

How many pounds in a hundredweight? Half a hundredweight? A quarter of a hundredweight? A tenth of a hundredweight?

What is 25% of a short ton? 50%? 75%? 10%? 12 1/2%? 40%? 8%? 2%?

What is 33 1/3% of a hundredweight? 12 1/2%? 10%? 5%?

What is 75% of a pound? 50%? 12 1/2%? 40%? 20%?

At 10 cents an ounce, what is half of a pound of cloves worth?

At 8 cents for 2 ounces, how much must be paid for a pound of mustard?

At $2 for a hundredweight, what is a ton of feed worth?

At $.75 for a hundred pounds, what is a ton of feed worth? A half ton?

XXX.

Review third grade on circles. Illustrate, draw.

How many degrees in a circle? In a half-circle? In a quarter-circle?

What is the ratio of each to each?

In how many hours does the earth revolve through 360°?

How many degrees in 1/2 the time? 1/4? 1/3?

How many degrees does the earth travel in 24 hours? In 1 hour? In 2 hours? In 3 hours? In 5 hours? In 8 hours? In 10 hours? In 12 hours?

In how many hours does the earth travel 60°? 90°? 180°? 210°? 45°?

Illustrate. Use globe, making drawings.

Let slips of paper represent 1 day, 1/2 day, 1/4 day, 1/8 day, and make problems.

What is the ratio of 60 to 90? 60 to 180? 15 to 45? 15 to 120? 15 to 360? 15 to 180?

What is the ratio of 360 to 15? 360 to 180? 360 to 45?

XXXI.

Draw a yard line. Square it.

How many square feet does it contain?

Divide it.

How many square feet around it? How many inches around it?

Estimate the number of square yards in the surface of the table; the wall; the floor; the door; the window.

About how many square yards of carpet would cover the floor? How many square yards of curtain would be required for the window? Of covering for the table?

Estimate and measure as many square surfaces as possible.

How many bricks, each 6 inches long and 4 inches wide, can be laid in a square foot? In a square yard?

How many square yards in a wall 16 feet long and 5 feet high?

How many square yards in a wall 20 feet long and 6 feet high?

XXXII.

How many rods in a mile? In a half-mile? In a quarter-mile? In 2 miles? In 3 miles? In 5 1/2 miles? In 10 miles?

How many feet in a mile? In a half-mile? A quarter-mile? In 2 miles? 2 1/2 miles?

A wheel turns 10 feet in each revolution. How many times will it turn in going a mile? A half-mile? A quarter-mile?

How many yards in a mile?

Find the cost of fencing a field a mile square at $10 a rod.

Find the cost of fencing a field 160 rods long and 140 rods wide at $20 a rod.

How many square rods in a field 20 rods long and 15 rods wide?

How many square rods in a piece of land 60 rods long and 80 rods wide?

How many square rods in a garden 20 rods long and 9 1/2 rods wide?

How many square rods in a field 140 rods long and 10 1/2 rods wide?

XXXIII.

At $.80 for .4 of a yard of cloth, what will a yard cost?
At $.75 for .3 of a bushel of cherries, what will a bushel cost?
At $.90 for .9 of a yard of cloth, what will 5 1/2 yards cost?
At $1.80 for .6 of a yard of carpet, what will 3 yards cost?
At $10 an acre, what will .9 of an acre of land cost?
At 75 cents a pound, what will .8 of a pound of tea cost?
At 60 cents a dozen, what will .9 of a dozen of oranges cost?
At 18 cents for .3 of a pound of tea, what will 4 pounds cost?
At $6.75 a ton, what will .7 of a ton of coal cost?
.6 of a ton cost $9. What will 2 tons cost?
.7 of a pound of coffee cost 49 cents. What will 3 pounds cost?
.11 of a yard of silk cost 88 cents. What will 8 yards cost?

XXXIV.

11/12 of a pound of tea cost 33 cents. What is the cost of 1 pound? 5 pounds? 6 pounds?

7/24 of a yard of goods cost 70 cents. How much is 1/2 yard worth?

11/24 of a man's money is $66. How much money has he?

5/18 of a yard of cloth is worth $.75. What is a yard worth?

23/25 of a man's salary is $4600. What is his salary?

A man spent 4/5 of his money and had $300 left. How much did he spend?

A boy spent 1/2, 1/4 and 1/6 of his money and had $.25 left. How much had he at first?

A boy spent 1/10, 1/5 and 1/2 of his money and had $.50 left. How much had he at first?

A boy having lost 2/3 of his marbles finds that he has 40 marbles left. How many had he?

A man spent 1/9 of his money for a book, 1/3 for a knife, and the rest, $.75, for a theater ticket. How much money had he?

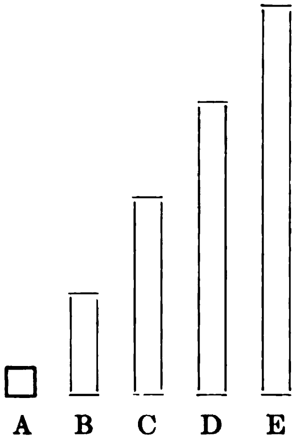
XXXV.

Change at sight to fractions having the smallest possible same denominator.

1/24, 1/30, 12/60; 3/15, 7/45, 5/90; 2/20, 7/30, 9/40; 3/8, 1/4, 5/16, 2/3; 1/2, 2/9, 4/7; 1/4, 1/6, 1/5; 2/7, 1/3, 1/8; 1/9, 1/10, 9/12; 1/8, 1/4, 3/5; 2/7, 5/8, 2/3; 1/4, 1/8, 2/9; 1/2, 3/4, 7/8, 5/12; 1/5, 5/6, 3/10; 7/8, 2/3, 5/9, 3/4; 1/12, 9/20; 7/10, 9/15, 1/30; 3/7, 2/14, 11/28; 1/9, 1/10, 11/12; 3/40, 1/50, 7/60; 9/10, 11/12, 7/15; 3/72, 1/2, 5/8; 7/90, 11/45, 5/12; 7/30, 9/16; 5/70, 1/20, 3/50; 1/7, 1/2, 3/5; 5/11, 6/12; 1/20, 3/10, 2/5; 1/5, 1/9, 1/4; 1/2, 7/8, 1/3; 3/4, 4/5, 5/9; 1/2, 2/3, 3/4, 4/5; 1/7, 3/8, 1/4, 1/2; 1/6, 7/9, 2/3, 3/5; 11/16, 5/18, 9/20; 1/9, 1/12, 1/24; 1/2, 3/5, 2/7, 7/8.

XXXVI.

Visualize solids whose ratios are 1, 3, 6, 9, 12.



Call them A, B, C, D, E.

What is the ratio of A to each of the others?

What is the ratio of B to each of the others?

What is the ratio of C to each of the others?

What is the ratio of D to each of the others?

What is the ratio of E to each of the others?

How many A's in B? C? D? E?

How many B's in C? D? E?

How many C's in D? E?

How many D's in E?

How many times A is B? C? D? E?

Call A 3. What shall we call B? C? D? E?

What part of E is A? Of D is B? Of B is A? Of E is B?

D is valued at 90 cents. What is the value of each of the others?

C is worth $1.80. What is the value of each of the others?

C is 100%. What per cent is each of the others?

D is 27/36. What is each of the others?

B is .6. What decimal is each of the others?

E is 1 foot. How many inches in each?

E is 1 yard. How many inches in each?

C is a bushel. What part of a bushel is each of the others?

C is a house valued at $3000. What is the value of each of the others?

B is a piece of carpet worth $15. What is the value of the others?

At 60 cents for A, what must be paid for B? C? D? E?

If D is 27/36, what is the sum of all?

If A is a foot, how many yards in E?

If A is a gallon, what part of a gallon is each of the others?

XXXVII.

Divide objects into hundredths, as bundles of sticks, pasteboard strips, etc.

Find sums; differences.

Divide into fiftieths. Compare hundredths and fiftieths. Find sums and differences. Divide into twentieths. Compare hundredths and twentieths. Draw lines, blocks, etc.

XXXVIII.

Divide into twenty-fifths. Compare with hundredths and fiftieths. Illustrate with lines, drawings, objects, solids.

With objects show number of hundredths in tenths, fifths, halves, fourths, twentieths, fiftieths. Compare. Make problems, as: How many tenths in 3/20?

How many hundredths in 1/5?
How many twentieths in 3/10?
How many fiftieths in 7/10?
How many fiftieths in 4/25?
How many tenths in 4/5?
How many hundredths in 4/25, 1/2, 1/5, and 1/4?
How many fiftieths in 4/25, 1/5, 3/10?
How many tenths in 1/2, 1/5, 5/10?
How many hundredths in 1/2, 1/5, 1/10 and 3/4?
How many fiftieths in 1/2, 1/5, 3/10, 11/25?
How many twentieths in 3/4, 1/2, 3/10?

XXXIX.

Take 11/20 from 3/4; 9/10 from 1; 11/25 from 2; 3/5 from 23/25; 23/50 from 1/2; 17/100 from 1/3; 16/100 from 3/4; 1/35 from 9/10; 17/100 from 4/5; 7/25 from 99/100; 9/100 from 8/25; 12/100 from 16/50; 3/50 from 8/40; 6/30 from 7/15; 11/25 from 9; 2 1/12 from 3; 6 3/10 from 8; 4 1/5 from 5; 98/100 from 2; 2 97/99 from 3; 16/25 from 10; 6 3/5 from 8; 5 1/3 from 12; 3 6/7 from 10; 5 1/8 from 9.

XL.

Sometimes people borrow money and pay "rent" for the use of it. This "rent" is called interest. It is a certain fraction, or per cent, of the amount borrowed.

If $100 is borrowed from Mr. Johnson by Mr. Davidson for one year, and Mr. Davidson agrees to pay Mr. Johnson 5% for the loan of it, Mr. Johnson will pay back to Mr. Davidson at the end of the year $100 + 5% of the $100 which is $5, or $105 in all.

At 6% a year, what will Mr. Davidson pay for the use of $200 for a year?

XLI.

Visualize.

What is the interest on $500 for 1 year at 6%?
What is the interest on $600 for 1 year at 7%?

What is the interest on $900 for 1 year at 8%?
What is the interest on $1250 for 1 year at 4%?
What is the interest on $625 for 1 year at 7%?
What is the interest on $380 for 1 year at 5%?
What is the interest on $200 for 3 years at 5%?
What is the interest on $600 for 3 years at 4%?
What is the interest on $225 for 3 years at 6%?
What is the interest on $800 for 2 1/2 years at 5%?
What is the interest on $920 for 2 1/2 years at 5%?
What is the interest on $845 for 2 1/2 years at 5%?
What is the interest on $1640 for 3 years at 6%?
What is the interest on $2100 for 3 years at 5%?
What is the interest on $1840 for 3 years at 4%?
What is the interest on $2750 for 3 years at 6%?
What is the interest on $720 for 3 years at 4%?
What is the interest on $1440 for 3 years at 5 1/2%?
What is the interest on $2160 for 3 years at 4 1/2%?
What is the interest on $1160 for 3 years at 2%?

XLII.

Develop and drill:
33 1/3% = ? 12 1/2% = ? 5% = ? 10% = ? 20% = ?
16 2/3% = ? 8 1/3% = ? 40% = ? 60% = ? 6 2/3% = ?
80% = ? 100% = ? 25% = ? 50% = ? 75% = ? 6 1/4% = ?
1/5 = ? 1/2 = ? 1/4 = ? 1/3 = ? 1/6 = ? 1/8 = ? 1/10 = ?
1/12 = ? 1/15 = ? 1/16 = ? 1/20 = ? 2/20 = ? 3/20 = ?
4/20 = ? 3/8 = ? 5/8 = ? 7/8 = ? 1/25 = ? 1/50 = ?
3/4 = ?

XLIII.

144 = ? 12 = ? 3 = ? 8 = ? 160 = ? 640 = ? 5280 = ? 27 = ?
128 = ? 60 = ? 24 = ? 365 = ? 366 = ? 10 = ? 9 = ? 360 = ?
30 1/4 = ? 5 1/2 = ? 20 = ? 16 = ? 200 = ? 2240 = ? 100 = ?
7 = ? 52 = ? 320 = ? 2 = ? 4 = ?

XLIV.

Develop and drill:
$7.50 is 20% of what number? $1.75 is 12 1/2 % of what number?
$8.25 is 5% of what number? $4.50 is 25% of what number?
$2.25 is 12 1/2% of what number? $6.50 is 20% of what number?
$8.50 is 16 2/3% of what number? $7.50 is 5% of what number?
$10.00 is 10% of what number? $500 is 25% of what number?
$625 is 33 1/3% of what number? $840 is 200% of what number?
$720 is 300% of what number? $880 is 400% of what number?
$150 is 10% of what number? $425 is 25% of what number?
$680 is 50% of what number? $720 is 33 1/3% of what number?
$960 is 16 2/3% of what number?

XLV.

What is 8% of $1960? What is 9% of 7168 yards?
What is 8% of 248 men? What is 16 2/3% of 960 hours?
What is 8 1/3% of 1440 days? What is 5% of 8480 miles?
What is 40% of 9680 feet? What is 60% of 5280 feet?
What is 80% of $7200? What is 200% of 724 yards?
What is 50% of 1640 pounds? What is 12 1/2% of 965 pounds?
What is 75% of 1640 pounds? What is 66 2/3% of 840 feet?
What is 150% of 726 cords? What is 500% of 25 cents?
What is 600% of 32 cents? What is 50% of 25 cents?
What is 25% of $3?

XLVI.

I sell goods for 50 cents which is 200% of the cost. Find the cost.

I sell goods for $1.50 which is 50% of the cost. Find the cost.

$25 is 25% of the cost of a house. Find the cost.

$80 is 200% of the cost of a boat. Find the cost.

$320 is 12 1/2% of the cost of a house. What is the cost?

$75.50 is 50% of the value of a watch. What is the watch worth?

$90 is 16 2/3% of the value of a boat. What is the boat worth?

$33 is 300% of the value of some books. What is the value of the books?

$75 is 12 1/2% of a girl's wages for a year. How much does she earn in a month?

$3.75 is 25% of a boy's savings. How much has he saved?

XLVII.

$75 is 3/4 of my money. How much have I?

$920 is 2/3 of the cost of a house. What is the house worth?

$500 is 4/5 of the value of a boat. What is the boat worth?

$720 is 3/4 of the money I have in the bank. How much have I in the bank?

180 bushels are 6/7 of the number of bushels of grain in a bin. How much grain in the bin?

24 quarts is 12/13 of the number of quarts in a keg of molasses. How many gallons in the keg?

196 hours is 2/3 of the time a boy attended school during the term. How long did he attend?

76 pounds is 2/5 of the number of pounds of sugar in a barrel. How many pounds in the barrel?

9/10 of my money is $810. How much money have I?

3/40 of a farm contains 27 acres. How many acres in the farm?

11/12 of a man's time is 33 months. How long is his time?

7/20 of a boy's earnings amounts to $49. How much does he earn?

2/15 of a lot contains 60 square feet. How many square feet in the lot?

7/8 of a boy's wages bought a horse for $217. How much were his earnings?

9/11 of a farm cost $828. What was the farm worth?

After spending 3/7 of my money I had $48 left. How much had I at first?

After the cattle had eaten 7/8 of the feed in a barn, a farmer found that he had 29 bushels left. How many bushels had he at first?

XLVIII.

Have pupils study the cubic inches in blocks.

Measure the blocks and discover 1 inch on each side.

Have boxes whose dimensions are 1 by 1 by 1 cu. ft. Measure sides, depth, ends, and compare with inch blocks.

Develop the idea that a box 1 ft. by 1 ft. by 1 ft. contains a cu. ft. by filling the box with sand, oats, water, chalk or other material.

Measure a cu. ft. of sand, clay, oats, etc.

Make boxes whose dimensions are 1 in. by 1 in. by 1 in. How many such boxes make one row in the cubic foot box?

How many such rows would be required to fill the bottom of the box?

How many such layers would fill the box? How many cubic inches would fill the box?

Draw a cubic foot with rulers.

Draw free hand. Measure. Draw again.

How many cubic inches in a cubic foot? 1/2 of a cubic foot? 1/4 of a cubic foot?

XLIX.

Name the things that can be measured in cubic inches; cubic feet; square inches; square feet; long inches; long feet.

Measure boxes, baskets, blocks, etc.

Visualize 1 cubic foot solid and other solids and state ratios.

Call the cubic foot solid A and the smaller block B.

State ratios.

How many inches in the block? Blocks in a layer?

B is what part of A?

How many cubic inches in B? In 3 B's? In 4 B's?

How many A's in a block whose dimensions are 3 by 2 by 1? 5 by 2 by 2? 3 by 3 by 3? 6 by 2 by 1?

How many A's in a block 8 by 2 by 1?

Find the number of cubic feet in walls whose dimensions are

4 by 2 by 1,	8 by 4 by 2,	7 by 4 by 1,
3 by 2 by 1,	6 by 3 by 2,	9 by 3 by 2.

L.

Visualize a box 2 ft. by 3 ft. by 5 ft. and discover the number of cubic feet it will contain.

Visualize a box 3 feet by 4 feet by 3 feet and discover the number of cubic feet it will contain.

How many cubic feet of air in a room 12 ft. by 16 ft. by 8 ft.?

No. of cubic feet in a vat of oil whose dimensions are 10 ft. by 6 ft. by 3 ft.?

No. of cubic feet in a block of marble whose dimensions are 2 ft. by 6 ft. by 8 ft.?

No. of cubic feet in a load of wood whose dimensions are 6 ft. by 8 ft. by 4 ft.?

No. of cubic feet in a load of stone 8 feet by 6 feet by 5 feet?

No. of cubic feet in a room 12 feet by 10 feet by 6 feet?

No. of cubic feet in a block 18 feet by 9 feet by 6 feet?

No. of cubic feet in a block 16 feet by 8 feet by 3 feet?

No. of cubic feet in a bin 16 feet by 7 feet by 4 feet?

LI.

Measure 5 1/2 yards on the floor. 5 1/2 yards at right angles to the first line. Finish the square. This space contains 1 square rod.

How many square yards in a square rod?

What is the relation of 1 square rod to 1 square yard?

Measure a square rod on the school grounds.

How many feet of fencing would inclose it?

What would the fence cost at $2 a foot?

How many square feet of flooring would cover it?

What would the flooring cost at $.50 a square foot?

How many onion-beds, each 4 ft. by 4 ft., could be made in this space?

About a half bushel of onions would be produced in each. What would they be worth at 50 cents a peck?

LII.

Have pupils inspect a ton of coal, a ton of hay, at home or at the dealers', and find out the number of pounds in it. Also view a hundred pounds of flour, feed or other matter sold by the hundredweight.

How many pounds in 2 tons? 3 tons? 10 tons?

How many tons in 12000 lb.? 10000 lb.? 5000 lb.?

What is the ratio of 100 lb. to 2000 lb.?

What is the ratio of 2000 lb. to 100 lb.?

How many ounces in a ton? In a hundredweight?

100 lb. is what part of a ton? What per cent?

1/20 is what per cent? 4/20 is what per cent? 5/20? 6/20?

Value of 1 ton is $2. Find the value of 5 T., 3 T., 2 1/2 T.

Value of 5 tons is $40. Find the value of 2 1/2 T., 10 T., 20 T.

Value of 10 cwt. is $10. Find the value of 5 cwt., 20 cwt., 15 cwt.

How many pounds in 10 cwt.? 15 cwt.? 16 cwt.?

At 2c a pound, find the cost of a ton of clover-seed.

5 cwt. of feed cost $3. Find the cost of 2 1/2 tons.

How many pounds in 3 cwt.? 5 cwt.? 2 tons? 5 tons?

Visualize.

LIII.

Add 19.1
32.1
72.9
18.4
16.5
38.3

LIV.

Subtract	18.75	40.05	12.25
	10.31	31.96	6.01

LV.

Multiply	$20.50	$.32
	4	12

LVI.

Divide $\frac{\$20}{4}$ $\frac{\$80}{5}$ $\frac{\$60}{12}$ $\frac{\$50.50}{2}$ $\frac{\$30.25}{5}$

$\frac{\$1.00}{.05} = ?$ $\frac{\$3.25}{.05} = ?$ $\frac{\$1.80}{.10} = ?$

LVII.

Visualize. Add	1 bu. 3 pk. 1 qt. 1 pt.	1 hr. 15 min.
	2 " 2 " 3 " 1 "	2 " 40 "
	1 " 1 " 1 " 1 "	3 " 20 "
	3 gal. 2 qt. 1 pt.	1 yd. 1 ft. 11 in.
	1 " 1 " 1 "	2 " 2 " 2 "
	2 " 3 " 1 "	3 " 1 " 5 "

LVIII.

Subtract	4 hr. 15 min.	3 min. 45 sec.
	2 " 10 "	2 " 30 "
	5 yd. 2 ft. 11 in.	4 yd. 1 ft. 11 in.
	2 " 1 " 9 "	2 " 2 " 9 "

LIX.

Multiply

1 hr. 15 min. by 3; by 4; by 5.
2 yd. 2 ft. by 6; by 8; by 5.
1 lb. 3 oz. by 10; by 3; by 9.
1 ft. 5 in. by 6; by 4; by 8; by 9.
3 min. 10 sec. by 9; by 6; by 5.

LX.

Add	15 4/100	15.04
	16 3/100	16.03
	25 9/100	25.09
	72 81/100	72.81

	10.05	10 5/100
	9.03	9 3/100
	2.07	2 7/100
	4.22	4 22/100

LXI.

Subtract	16.48	16 48/100
	9.31	9 31/100

LXII.

Visualize. Tell at a glance the largest number that will divide, without a remainder: 18 and 8; 16 and 12; 3, 6 and 9; 4, 8 and 16; 5 and 25; 35 and 25; 35 and 42; 6 and 21; 7, 14 and 63; 21, 25 and 29; 18 and 81; 72 and 48; 60 and 16; 42, 45, 48 and 60; 72, 75 and 36; 90 and 180; 12 and 144; 72 and 144; 36 and 72; 90 and 80; 80, 16 and 40; 20, 30, 50; 2, 4, 6, 8; 24, 48; 100, 200 and 400; 150 and 300; 50, 75, 100, 150; 20, 40, 60 and 80; 12, 10 and 16; 80, 90 and 100; 40, 45, and 50; 70, 80, 90; 65 and 35; 12, 24, 36; 5, 10, 20, 30; 50, 100, 200.

LXIII.

Visualize.

Find cost. 12 lb. tea @ $.92; 36 lb. coffee @ .38; 15 lb. sugar @ 9 1/2c; 18 lb. rice @ 7 1/3c; 12 1/2 lb. fish @ 16c; 75 yd. cloth @ 12 1/2c; 80 lb. raisins @ 8 1/4c; 96 ft. wire @ 6 1/4c; 25 yd. cloth @ 8 1/5c; 38 lb. currants @ 9c; 25 lb. ham @ 16c; 18 lb. beef @ 15c; 12 lb. mutton @ 18c; 25 yd. carpet @ $1.60; 45 yd. cloth @ $.15; 72 ft. wire at 9 1/4c; 60 yd. carpet @ $.68; 72 yd. gingham at 8 1/6c; 60 yd. lace @ 16 1/4c.

LXIV.

Find cost: 8 lb. @ 12c; 10 lb. @ 4c; 9 lb. @ 5 1/3c; 8 oz. @ 3c; 8 1/2 oz. @ 4c; 10 lb. @ 16c; 80 yd. @ 42c; 75 yd. @ 28c; 16 yd. @ 32c; 21 yd. @ 40c; 45 yd. @ 22c; 16 yd. @ 50c; 18 1/13 yd. @ 27c; 15 2/3 yd. @ 15c; 40 1/2 yd. @ 80c; 25 gal. @ 16c; 40 gal. @ 28c; 72 gal. @ 36c; 49 yd. @ 18c.

LXV.

Visualize.

At a glance tell what is the smallest number that will contain without a remainder: 9 and 18; 3 and 7; 6 and 5; 9 and 4; 10 and 20; 4

and 8; 7 and 9; 8 and 11; 12 and 3; 2 and 4; 6 and 8; 3 and 4; 7 and 12; 12 and 15; 12 and 14; 3 and 9; 6 and 8; 21 and 42; 28 and 56; 48 and 96; 50 and 100; 72 and 144; 12 and 24; 90 and 45; 80 and 40; 72 and 24; 18 and 72; 12 and 18; 20 and 30; 40 and 50; 80 and 100; 25 and 75; 80 and 160; 32 and 96; 2, 4, 8 and 6; 3, 2 and 5; 12, 24 and 36; 18, 36 and 72; 180, 360 and 90; 25, 75 and 100; 80, 160 and 40; 3, 5 and 16; 4, 2 and 7; 8, 2, 3 and 4; 9, 7 and 5; 4, 3, 8 and 6; 12, 15 and 18; 7, 14 and 35; 9, 18 and 36; 2, 8, 6 and 10.

BULLETIN NO. 47

STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

ARITHMETIC

PREPARED BY MISS SARAH M. NICHOLSON, COUNTY NORMAL SUPERVISOR.

FIFTH GRADE

Materials: artificial coins, colored sticks, colored blocks, squares, cubes, cylinders, spheres, cones, prisms, colored cards, beans, corn, sand, clay, measures (gill, pint, quart, peck, bushel), foot rulers, yard sticks, scales.

The visualization of numbers in problems in integers becomes more difficult than in the preceding grades, and involves larger numbers and more of them in a problem.

The exercises given in visualization are merely suggestive of what is to be done in the daily drill-work which should form at least two-thirds of the work.

Visualize.

Add	2146	Subtract	20176	Multiply	146	219	416
	3214		19245		25	12	32
	1415						
	3210						
	1783	Divide	2032	1765			
			9	12			

Add	1/3	1/2	Subtract	5/6 − 1/3	Multiply 2/3 × 1/2
	1/2	1/4		7/8 − 3/4	
	1/4	2/3			

Divide 5/9 by 1/9; 7/8 by 1/8; 8/8 by 2/8; 10/12 by 2/12.

Add $185.50
23.75
16.40
11.01
15.05

Subtract $309.50
196.75

Multiply 460
12

$275
20

325
3000

Divide $180.90
9

Add 1 bu. 3 pk. 2 qt. 1 pt.
2 " 1 " 3 " 1 "
1 " 1 " 1 " 1 "

Subtract 4 bu. 1 pk.
1 " 7 "

4 lb. 3 oz. × 11 = ?

7 lb. ÷ 12 = ?

Add 1/2
2/3
7/8

1/5
1/4
1/3

From 9/10 take 1/3

1 7/8 × 1/3 = ?
5/6 ÷ 1/2 = ?

Reduce 24/30 to lower terms; 27/36; 40/50.

3 1/2 × 16 = ?
3 1/5 ÷ 2/3 = ?

Add 2 1/2
1 1/3
4 1/5

From 10
take 5 2/3

From 32
take 14 5/9

From 329
take 109 5/7

From 421 1/2
take 176 1/4

From 894 1/5
take 214 1/2

Change 1/2, 2/3, 7/8, 9/10 to higher denominators.
Change 1 1/2, 3 1/8, 7 1/5 to improper fractions.
Change 17/5, 19/16, 14/3 to mixed numbers.

Per cent means by the hundredths. Each part is also called 1% or one per cent. Ten per cent equals 1/10 or .1.

Divide a bundle of a hundred sticks into ones. Pick out 1%, 5%, 10%, 15%, 40%. Find 1% of 200 sticks; of 300 sticks. Find 10% of 50 sticks. Find 5% of 100 sticks. Find 1/20 of 100, 20% of 100. Find 50% of 100. What does it equal?

Teach 5 1/2 yd. in a rod; 320 rd. in a mile. Measure a rod. Estimate a mile. Name places 1 mile from schoolhouse. How many blocks in a mile? Give many problems.

Teach 360° in a circle. Draw circles of various sizes. What is the circumference? What is the diameter? There are 360° in the circumference of any circle? How many degrees in half the circumference of a finger ring? Of a bracelet? Half of the earth's circumference? How many degrees in 1/4 of a circle? In 1/4 of the circumference of a dinner plate? Of a circular cistern?

The circumference of a circle is 3 1/7 times the diameter. Find the circumference of a cistern that is 14 ft. in diameter.

If it is possible, have enough inch cubes to build a cubic foot. If not, build the four walls and let the children's imagination provide the rest. How long is a cubic foot? How wide? How many cubes in a row? How many rows high is each wall? How many walls in the solid cube? How can you find the number of cubic inches in a cubic foot?
Measure:

1. How many inches long is your desk? How many feet? How many inches wide? How many feet?
2. How many inches in the perimeter of your desk? How many feet?
3. How many feet in the perimeter of your room? How many yards?
4. At 2 cents a foot, find the cost of molding for the room. At 3 1/2 cents.
5. How many feet in the perimeter of the table?
6. How many square inches in a piece of paper 6 inches long and 6 inches wide?

Measure and divide in squares. Count. How many square inches in a paper 12 in. × 12 in.? 9 in. × 7 in.? 8 in. × 6 in.? How can you find the number of square inches? How many rows? How many inches in each row? How many square inches in a book cover? How many square inches in the dictionary cover? How many square feet? Divide a section of the blackboard into square feet. Formulate the rule. Find similar problems.

With the measure, weights, etc., discover the relations of quantities, formulate the rules as above, after they have been discovered by experiment.

1. At 15 cents for 2, what will be the cost of 96 tablets?
2. At 11 cents for 3, find the cost of 81 erasers.
3. At 7 cents for 5, how many marbles can be bought for $1.47?
4. 3 dolls' hats can be cut from 14 square inches of paper, how many can be cut from 105 square inches?
5. John sells pencils at the rate of 6 for 9 cents, how much will he receive for 63 pencils?

Two boys start from the same direction and travel, one at the rate of 10 miles an hour, the other at the rate of 12 miles. If they go in opposite directions, how far apart will they be in 7 hours? If they go in the same direction?

1. At $1/3 apiece, what will 4 1/2 doz. fans cost?
2. At $2/3 each, what will 6 1/2 dozen books cost?
3. With objects find:
    (1) 1/10, 1/2, 1/3, 1/6, 1/5, 3/10, 2/10, 7/8, 5/9.
    (2) What equals 3/6, 4/8, 5/10, 2/6, 4/12, 9/6, 5/10, 10/12?
    (3) Which is greater 1/2 or 1/3? 2/3 or 3/4? What is the difference?
    (4) What fractions equal 1/2, 1/3, 1/4, 2/3, 3/4, 4/5?
    (5) Find equivalents for 10/12, 4/6, 4/8, 9/12, 8/12.
    (6) Add 3/4, 2/4, 5/4 and 6/4. Subtract 11/12 – 5/12. Multiply 1/2 × 1/2, 2/3 × 1/2, 5/6 × 1/5.

Write 1/2 in as many ways as you can.

1 is called 10/10, 12/12, 6/6. It is also called ten tenths and each of the equal parts is called one-tenth and written .1. When it is written .1 we call it a decimal. Only fractions with denominators ending in 0 can be written in this way. Read .1, .2, .3, .4, .5, .6, .7, .8, .9, 1.0 = 1. 0 after a decimal point has no meaning. 1.000 = 1. 1.100 = 1.1.

Write as a decimal 1/10, 3/10, 5/10. Add .1 + .2 + .3 + .4.

What is the difference between 1 and 1/10 or 1 and .1? 1 and .8? 1 and .3? 1 and .4? 1 and .5? 1 and .7? 1 and .9? 1 and .2? 1 and .6?

Sometimes 1 is divided into 100 parts, and then each part is called 1/100. It is written 1/100 or .01. If 1/100 is taken from 100/100 what remains? Then 1 — .01 = .99 or 100/100 — 1/100 = 99/100.

1 − .02 = ?   .07 + .10 = ?
1 − .03 = ?   .08 + .12 = ?   Use objects to develop very carefully.
1 − .04 = ?   .09 + .16 = ?

When one is divided into 100 parts each part is called 1/100 or .01 or 1%.

What then would 3 parts be called? 4 parts? 7 parts?

How many hundredths in 1/2 of 100/100? What is 1/2 of 1.00?

What is 1/2 of 100%? 1/4 of 100%? 1/5 of 100%? 1/3 of 100%? 1/6 of 100%?

After the aliquot parts have been worked out require the following in the visualizing drills:

1/2 = 50%   1/3 = 33 1/3%   1/8 = 12 1/2%
1/4 = 25%   1/5 = 20%   1/10 = 10%

From a bolt of cloth containing 25 yd., .5 was sold. How much remained? .9 of a man's weekly wage is $18. What is his wage? I lost .27 of my money, and had $146 left. What part had I left? How much had I at first? .7 of a yard of cloth costs $.49, how much is .9 worth? At .3 of a dollar a yard, how many yards of ribbon can be bought for $9? Give many such problems involving the use of aliquot parts.

Review and fix thoroughly by concrete drill work the following principles: 1. The whole given to find a part. 2. A part given to find the whole. 3. A part of one given to find another, as, what is 2/3 of 120? 20 is 2/3 of what? 2/3 of the cost of a book is $.50, what is the cost of 4 books?

20 is 10% of what number? 1/5 of the cost of a book is 10 cents.
20 is 1/10 of what number? .2 of the cost of a book is 10 cents.
20 is .1 of what number? 20% of the cost of a book is 10 cents.

Give many problems, as,

1. A man having $2000, lost 50% of it. How much had he left?
2. Willie sold 25% of his papers and had 15 left. How many had he at first?
3. A book that cost $1 was sold for 20% of its cost. What was lost on it?

Let the idea take root, give simple problems, many of them, but do not enlarge upon it or introduce intricate problems, or hours and minutes until the next grade. Make the simple idea of difference in time caused by longitude, very simple. When interest has been made very clear, introduce the exercises into the visualization problems. Find interest on $2000 for 3 years, 6 months at 5%. Do at sight.

I.

Visualize.
Add

$$\begin{array}{r}82435\\17296\\84072\\91637\\84165\\21738\\\hline\end{array}$$

II.

Subtract

$$\begin{array}{r}947283\\125164\\\hline\end{array}$$

III.

Multiply

$$\begin{array}{r}92438\\11\\\hline\end{array}\qquad\qquad\begin{array}{r}72416\\14\\\hline\end{array}$$

IV.

$$\frac{82416}{12}\qquad\qquad\frac{74183}{15}$$

V.

$$\frac{460}{12}=?\qquad\frac{725}{15}=?\qquad\frac{965}{18}=?\qquad\frac{485}{10}=?$$

$$\frac{728}{4}=?\qquad\frac{965}{16}=?\qquad\frac{324}{12}=?\qquad\frac{586}{7}=?$$

VI.

15 × 40 = ?	300 × 9 = ?	800 × 60 = ?
16 × 20 = ?	400 × 24 = ?	420 × 70 = ?
90 × 48 = ?	620 × 15 = ?	320 × 40 = ?
30 × 72 = ?	429 × 12 = ?	510 × 50 = ?

VII.

From 1 take 1/3. From 1 take 24/25.

From	800	9000	10000
take	7	11	15

Multiply	68000	7400	9000
	1/2	2/3	1/2
	100	200	300
	1/3	2/3	3/5

VIII.

The work in United States money, also, involves no new difficulties save length of problems which is increased in the daily drills, and larger numbers.

Many concrete problems may be given rapidly, the numbers placed on the board, erased instantly, and answers required.

1. John has $2.13, Mary has $10.75, Bessie has $11.50, Daisy has $24.12. How much have they all?
2. From a check for $8000 a man buys a house for $1200, furniture for $800, clothes for $325.50, books for $625.80. How much has he left?
3. One bushel of potatoes is worth $.56. How much are 2100 bushels worth?
4. At 16 cents a dozen, how many eggs can be bought for $8.80?

IX.

Visualize.

Add	$187.50
	325.16
	400.40
	916.25
	728.23
	518.40

X.

Subtract	$7248.75
	240.16

XI.

Multiply	$748.75	$912.15
	12	11

XII.

Divide $\frac{\$896.25}{\$.25}$ $\frac{\$400.15}{\$.15}$

$\frac{\$721.12}{\$.08}$ $\frac{\$31.14}{\$.07}$

XIII.

What is the largest number that will exactly divide 8 and 10? 12 and 15? 14 and 16?

What is the largest number that will divide 15 and 20 without a remainder?

What is the largest number that will divide 9, 12, 15 and 18 without a remainder? 16, 20, 24? 15, 20, 25, 30? 8, 4, 12? 12, 36, 48? 22, 44, 66? 75, 80, 90? 10, 20, 30, 40? 50, 60, 70? 25, 50, 100?

The largest number that will exactly divide two or more numbers is called the Greatest Common Divisor, or G. C. D.

What is the smallest number that will exactly contain 8, 6, 5? 3, 2, 4? 1, 4, 5? 7 and 8? 9 and 10? 6 and 5? 11 and 12? 2, 4, 8, 12? 5, 10, 15, 20?

The smallest number that will exactly contain two or more numbers is called the Least Common Multiple.

XIV.

What is the G. C. D. of:

15, 20 and 30? 25, 28, 30? 19, 38, 114? 75, 100, 160? 52, 104, 312? 40, 80, 100? 25, 50, 300? 17, 51, 68? 45, 12, 60? 70, 80, 90?

What is the L. C. M. of:

10, 20 and 30? 15, 25, 40? 2, 3, 4, 5? 6, 7, 8, 9? 5, 10, 12, 15? 4, 3, 7, 6? 5, 1, 9, 4? 15, 60, 75? 90, 30, 150? 16, 18, 20? 7, 8, 9, 10? 4, 4, 5, 6? 2, 3, 4, 5? 7, 1, 9, 8?

XV.

Visualize cards whose ratios are 1 and 10.

What part of 10 is 1? 2? 3? 4? 5? 6? 7? 8? 9?

Write one tenth, 1/10, .1.

Read .1, 1, 10, 100, 1,000, 10,000, 100,000, 1,000,000.

What has been done to each number by adding naught?

What is done by erasing one cipher from each number?

$8 \times 10 = ?$ $100 \times 10 = ?$ $50 \times 10 = ?$ $9 \times 100 = ?$ $11 \times 1{,}000 = ?$ $12 \times 10{,}000 = ?$ $3 \times 9{,}000 = ?$ $40{,}000 \div 1{,}000 = ?$ $80{,}000 \div 10 = ?$ $7{,}000 \div 1{,}000 = ?$ $90{,}000 \div 10{,}000 = ?$ $60{,}000 \div 20{,}000 = ?$ $40{,}000 \div 1{,}000 = ?$ $850 \div 100 = ?$ $750 \div 100 = ?$ $960 \div 100 = ?$ $4{,}000 \div 20 = ?$ $30{,}000 \div 30 = ?$ $40{,}000 \div 400 = ?$ $85{,}000 \div 850 = ?$ $85{,}000 \div 100 = ?$ $90{,}000 \div 900 = ?$ $7{,}500 \div 750 = ?$ $7{,}500 \div 10 = ?$ $960 \div 10 = ?$ $960 \div 96 = ?$ $9{,}800 \div 98 = ?$ $9{,}800 \div 100 = ?$

XVI.

Visualize with blocks 1 and 2/3.
Visualize with cards 1 and 2/3.
Visualize with circles 1 and 2/3.

1. How many times is 2/3 contained in 1?
2. What is the ratio of 1 to 2/3? Of 2/3 to 1?
3. How many 2/3 in 1?
4. A pound of tea costs 60 cents. How much is 2/3 of a pound worth?
5. Two-thirds of a yard of cloth cost 54 cents. How many times 54 cents will a yard cost? How much?
6. How many rods in 2/3 of a mile? $\frac{640}{3} = ?$
7. A jar 2/3 full contains 28 gallons of vinegar. How many gallons in the jar?
8. How many feet in 2/3 of a mile?
9. How many pounds in 2/3 of a ton?
10. Two-thirds of a boy's wages for a month amounted to $7.50. How many times $7.50 did he earn?

XVII.

Visualize 1 and 4/5 with cards, blocks, circles and drawings.

1. How many times is 4/5 contained in 1?
2. What is the ratio of 4/5 to 1? 1 to 4/5?
3. A box of oranges 4/5 full contains 120 oranges. How many oranges did the box hold when it was full?
4. The number of blocks in a box is 80. This is 4/5 of the number of blocks on the table. How many times 80 blocks is the number of blocks on the table?
5. How many seconds in 4/5 of a minute? How many degrees in 4/5 of a circle?
6. How many feet in 4/5 of a mile?
7. How many ounces in 4/5 of a pound?
8. How many pounds in 4/5 of a ton?
9. How many square inches in 4/5 of a square foot? $\frac{4 \times 144}{5} = ?$
10. 4/5 of the time Lucy spent in practicing is 1 hour 20 minutes. How long did she practice?

XVIII.

Visualize with papers, blocks, drawings, modelings, etc., 1 and 5/6.
How many 5/6 in 1?
How many times 5/6 is 1?
If 5/6 of a number is x, how many times x would the number be?
If 5/6 of a number is y, how many times y is the number?
Visualize blocks which are as 1 to 5/6.
Call 1 A and 5/6 B.

If A is 10, what is B?
If A is 20 gal., what is B?
If A is a farm worth $10,000, what is the value of B?
If A weighs 80 pounds, how much does B weigh?
If A is a ton, how many pounds in B?
If B is a mile, how many feet in A?
If B is a circle 100 feet in circumference, what is the circumference of A?

XIX.

In the same way visualize:
1 and 3/8; 1 and 7/8; 1 and 6/7; 1 and 7/12; 1 and 5/9; 1 and 4/7; 1 and 9/10; 1 and 1/16.

XX.

1. What is the ratio of 1 to 7/12?
2. How many 7/12 in 1?
3. How many 7/8 in 1?
4. How many times 7/8 is 1?
5. How many times 1/16 is 1?
6. How many times 5/9 is 1?
7. How many times 9/10 is 1?
8. How many times 4/7 is 1?
9. How many 4/7 in 1?
10. A box of matches 4/7 full contains 294 matches. How many were there when the box was full?

XXI.

1. How many oranges in a box if 4/7 of a box contains 256 oranges?
2. How many boards in a fence if there are 1240 boards in 5/9 of it?
3. How many yards in 9/10 of a mile?
4. How many ounces in 7/8 of a ton?
5. How many ounces in 4 3/8 lb.?
6. How many pounds in 5 7/8 tons?
7. How many pecks in 12 3/4 bushels?
8. How many miles does a train travel in 5 4/7 days, if it travels 518 miles a day?
9. How many yards in 160 rods?
10. A man earns $12.75 a week. How much does he earn in 4 2/3 weeks?
11. At $2.70 a day how much does a man earn in 4 5/6 days?
12. $12.50 is 5/9 of a man's weekly wages. How much does he earn in a week?

XXII.

Take a bundle of sticks containing 50.
What part of the whole number is 1 stick?
What is the ratio of 1 stick to 50 sticks?
What is the ratio of 50 sticks to 1 stick?

What is the ratio of 2 sticks to 50 sticks?
3 sticks to 50? 7 sticks to 50?

How many times will 8 sticks be contained in 50 sticks? 3 sticks in 50 sticks? 11 sticks in 50 sticks? 9 sticks in 50 sticks? 12 sticks in 50 sticks? 5 sticks in 50 sticks? 10 sticks in 50 sticks?

Draw a line 50 inches long. Divide into inches. Group inches in 3's, 4's, 5's, 6's, 7's, etc.

1. 3/50 are contained how many times in 50/50?
2. 4/50 are contained how many times in 50/50?
3. 5/50 are contained how many times in 50/50?
4. 9/50 are contained how many times in 50/50?
5. 8/50 are contained how many times in 50/50?
6. From 50/50 take 16/50, 10/50, 9/50, 11/50, 8/50.
7. Add 7/50 + 3/50 + 6/50 + 9/50.
8. How many fiftieths in 1/25? 2/25? 4/25? 5/25? 6/25?
9. How many fiftieths in 1/10, 3/10, 4/10, 5/10, 9/10?
10. How many fiftieths in 1/5, 3/5, 9/5, 6/5?
11. How many fiftieths in 1/2? 1/4?
12. What is the ratio of 1/50 to 10/50? 1/50 to 50/50? 1/50 to 9/50? 8/50 to 25/50? 3/50 to 16/50? 4/50 to 11/50? 7/50 to 30/50?
13. What is the ratio of 10/50 to 1/50? 30/50 to 1/50? 30/50 to 15/50? 16/50 to 3/50? 1/50 to 1/25? 1/50 to 1/10? 1/50 to 1/2? 1/2 to 1/50? 1/50 to 1/5? 1/5 to 1/50? 1/10 to 1/50?

XXIII.

With objects.

1. How much is 1/2 of an orange and 1/3 of an orange?
2. How much is 2/3 of a bundle of sticks and 1/2 of a bundle of sticks?
3. How much is 7/8 of a pound and 1/2 of a pound?
4. Change 1/2, 1/4, 3/8 to eighths. How many in all?
5. Change 2/5, 3/10, 1/2, 11/25 to fiftieths. How many in all?
6. Change 9/10, 2/3, 11/15 to thirtieths. How many in all?
7. Change 1/6, 1/12, 1/2, 2/3, 3/4 to twelfths. How many in all?
8. Change 9/10, 1/2, 3/5, and 2/3 to thirtieths. How many in all?
9. Take 9/10 from 30/30. Take 3/5 from 30/30.
10. Take 1/2 from 30/30. Take 1/6 from 18/30.
11. Take 2/3 from 30/30. Take 1/2 from 20/30.

XXIV.

Use objects—sticks, cards, beans, beads, etc.
Change 3/4, 2/3, 1/5, 5/6, 1/2 to thirtieths.
From 30/30 take 3/4. From 30/30 take 5/6, etc.
Add 1/2, 1/5, 2/3, 3/4.
Add 7/15 and 2/3.
Add 2/3 and 1/2 and 9/10.

XXV.

Use objects.
Change 7/10, 1/2, 3/5, 11/25 to fiftieths.
Add 1/10, 11/25 and 3/10.

Add 1/2 and 7/25.
Add 2/5 and 7/10.
Add 1 and 11/25 and 1/2.
Add 1 7/25 and 2 3/50.

XXVI.

Use objects.
Change 9/10, 11/25, 7/50, 3/4 to hundredths.
1. Add 3/4, 9/10, and 1 1/2.
2. Add 11/25 and 47/50.
3. Add 2 1/50 and 3 2/25.
4. From 100/100 take 47/50.
5. From 97/100 take 2/25.
6. From 11/50 take 3/25.
7. From 47/50 take 9/25.
8. From 1 47/50 take 1 9/25.
9. From 3 24/59 take 2 12/25.
10. From 2 11/100 take 1 3/50.

XXVII.

Use objects.
How many times is 3/100 contained in 100/100?
How many 4/25 in 100/25?
How many 5/6 in 100/6?
How many 7/8 in 160/8?
How much is 1/2 of 2/3? 1/3 of 3/4? 1/5 of 5/6? 1/6 of 6/7? 1/7 of 14/21? 1/8 of 24/25? 2/3 of 3/4?
Visualize.
Change 1/3, 1/2 and 1/6 to fractions having the same denominator.
Change 7/8, 2/5 and 3/4 to fractions having the same denominator.
1/8, 1/3 and 1/6.
9/10, 2/5 and 3/4.
7/8, 2/4 and 11/12.
15/16, 7/8, 9/10.
4/16, 2/3, 9/10 and 11/12.
7/8, 2/3, 3/4 and 1/2.
Change to higher forms:
2/4, 7/8, 11/12, 15/16.
Change to lower forms:
16/18, 24/26, 120/125, 15/18, 90/100, 70/80, 115/120, 75/80, 40/50, 180/360, 198/396.

XXVIII.

1. Add
5 2/3
3 4/5
10 1/2

2. Add
6 1/8
3 2/3
1 1/4

XXIX.

3. From 10 7/8
take 3 3/4

4. From 9 9/10
take 1 4/5

5. From 100
take 3 1/2

Visualize.

$$\begin{array}{r} 100 = 99\ 2/2 \\ -\ 3\ 1/2 \\ \hline 96\ 1/2 \end{array}$$

6. From 48 1/2
take 16 2/3

Visualize.

$$\begin{array}{r} 48\ 1/2 = 47\ 18/12 \\ 16\ 2/3 = 16\ 8/12 \\ \hline 31\ 10/12 = 31\ 5/6 \end{array}$$

XXX.

Visualize.

2/3 of 150
5/9 of 720
3/4 of 144
1 1/2 × 320
6 7/8 × 120

7/8 of 360
6/7 of 420
9/10 of 120
2 2/3 × 150
9 9/10 × 120

9/10 of 180
5/8 of 320
9/10 of 720
5 5/8 × 400
4 5/9 × 180

Multiply 180 by 9/10; 960 by 11/12; 784 by 2/3.

$$\begin{array}{r} 512 \\ 5\ 2/3 \\ \hline \end{array} \qquad \begin{array}{r} 408 \\ 7\ 1/2 \\ \hline \end{array} \qquad \begin{array}{r} 625 \\ 11\ 1/5 \\ \hline \end{array}$$

$$\begin{array}{r} 460 \\ 9\ 3/4 \\ \hline \end{array} \qquad \begin{array}{r} 720 \\ 8\ 2/3 \\ \hline \end{array} \qquad \begin{array}{r} 840 \\ 6\ 1/5 \\ \hline \end{array}$$

XXXI.

How many 3/4 in 1? In 2? In 10? In 30?
How many 7/8 in 1? In 2? In 5? In 6?
How many 9/10 in 1? In 4? In 30? In 50?
How many 5/6 in 1? In 4? In 3? In 10?
How many 11/12 in 1? In 3? In 5? In 60?
How many 7/12 in 1? In 2? In 10? In 30?
How many 2/3 in 1? In 3? In 12? In 20?

$$\frac{40}{3/4},\ \frac{16}{2/3},\ \frac{70}{1/2},\ \frac{40}{5/6},\ \frac{80}{7/8},\ \frac{90}{5/6},\ \frac{75}{4/5},\ \frac{80}{2/5},$$

$$\frac{120}{2/3},\ \frac{90}{4/5},\ \frac{81}{2/3},\ \frac{72}{3/4},\ \frac{5}{11/15},\ \frac{6}{2/3},\ \frac{7}{5/9},\ \frac{8}{2/7}.$$

XXXII.

1. Mention a place about a mile distant from the schoolhouse. From home.
2. How many feet in 1 rod? How many rods in a mile?
3. How many feet in 1 mile? In 1/2 mile? In 2 1/2 miles? In 3 miles?
4. A wheel 16 feet in circumference turns how many times in traveling one mile? 2 miles? 10 miles?
5. Find the cost of the lumber in a mile of fencing, four boards high, at $2 a thousand feet.
6. How many yards in a mile? In 2 miles? A thousand feet of barbed wire cost $8. What will a half mile of fencing 4 wires high cost?
7. How many feet around a piece of land a mile square?
8. How many feet around a piece of land 1/2 of a mile square?
9. What will the fencing cost at 15 cents a yard?
10. A piece of land 20 rods long and 8 rods wide contains an acre. What will it cost to fence it at 5 cents a foot?
11. An acre of land will produce 200 bu. of potatoes. What are they worth at 48 cents a bushel?
12. What will be the cost of a wall 3 rods long at $.80 a foot?
13. Four men dig the potatoes grown on an acre of land in 4 days. In how many days can 15 men dig them?
14. Three men build a rod of wall in 10 days. In how many days will four men build it?
15. What is the ratio of a foot to a yard? A yard to a foot? A foot is what part of a yard?

XXXIII.

1. What is the ratio of a rod to a yard? Of a yard to a rod?
2. A piece of land 8 rods wide and 20 rods long contains an acre. Estimate the number of apple trees 8 feet apart that can be grown on it. If each tree produces on an average 1 1/2 bushels of apples, for how much will the fruit crop be sold at 30 cents a bushel?
3. A farmer wishes to fence a piece of land 16 rods long and 10 rods wide. What will be the cost of the lumber for a three-board fence at $2 for a hundred feet?
4. How many onion beds each 10 ft. by 5 ft. can be made on a piece of ground 100 ft. long and 50 ft. wide, allowing 10 feet on the length and width each, for paths?
5. What will fencing for the garden cost at $.15 a yard?

XXXIV.

1. Measure a rod on the school grounds. On the sidewalk. Measure 2 rods; 3 rods; 4 rods. Measure a square rod. Estimate two square rods; three; four; five; twenty; forty. Mention pieces of land that contain about one acre; two acres; five acres.
2. A square rod produces 12 bushels of onions. How many bushels will 160 square rods produce? What are the onions worth at 40 cents a bushel?

3. A piece of land 8 rods long and 5 rods wide contains a quarter acre of land. How many feet of fencing will inclose it?
4. A piece of land 10 rods long and 16 rods wide contains an acre. How many feet of fencing will inclose it?

XXXV.

1. How many quarts in 7 1/4 gallons?
2. How many ounces in 16 1/4 lb.?
3. How many tons in 10576 lb.?
4. How many miles in 10560 ft.?
5. How many yards in 960 feet?
6. How many square inches in 7 sq. ft.?
7. How many square yards in 80 sq. ft.?
8. At $1.75 a hundredweight, what will 2 1/2 tons of feed cost?
9. At 16 cents a gallon what will 3 qt. of milk cost?
10. How many ounces in 9 3/4 lb.?
11. How many inches in 4 5/9 yards?
12. At 7 cents an inch, what will 5 2/3 yd. of wire cost?
13. At 3 cents a gill, what will 9 gallons of oil cost?
14. At 4 cents a pint, what will a gallon of cream cost?
15. At $1.28 a bushel, what will 3 pints of hickory nuts cost?

XXXVI.

Draw circles.

How many degrees in each?

How many degrees in a half-circle? A quarter-circle? In 1/12 of a circle? 1/10 of a circle? 1/3 of a circle? In 1/15 of a circle? 1/24 of a circle?

How many degrees does the earth travel in 1 day? How many in 1/2 day? 1/4 of a day? 1/3 of a day? 1/12 of a day? 1/24 of a day?

How many degrees does the sun travel in 1/24 of a day? In 1 hour? 2 hours? 3 hours? 5 hours? 6 hours? 8 hours? 10 hours? 12 hours?

Illustrate with globes and drawings. Do not develop further.

XXXVII.

Visualize.

Add
10 pints
8 pints
6 pints
5 pints
How many gallons, quarts and pints?

Add
9 inches
8 inches
17 inches
13 inches
How many yards, feet and inches?

Add
7 gills
8 gills
4 gills
3 gills
2 gills
How many gallons, quarts, pints and gills?

Add
7 feet
9 feet
11 feet
16 feet
40 feet
How many yards and feet?

Add
4 pecks
3 pecks
9 pecks
3 pecks
How many pecks?
How many bushels?
How many bushels and pecks?

XXXVIII.

Visualize.

Add		
	3 gal. 2 qt.	7 yd. 1 ft.
	4 gal. 1 qt.	2 yd. 2 ft.
	2 gal. 1 qt.	1 yd. 2 ft.
	1 gal. 3 qt.	2 yd. 1 ft.

Add
7 bu. 3 pk. 1 qt.
2 bu. 2 pk. 3 qt.
4 bu. 3 pk. 5 qt.
2 bu. 1 pk. 1 qt.

Add
2 gal. 2 qt. 1 pt. 1 gi.
1 gal. 1 qt. 1 pt. 3 gi.
1 gal. 2 qt. 1 pt. 2 gi.
4 gal. 0 qt. 0 pt. 1 gi.

XXXIX.

Visualize.

1. From 1 yd. 1 ft.
take 2 ft.

Visualize 1 yd. 1 ft. = 4 ft.
—2 ft.

2 ft.

2. From 7 yd. 2 ft.
take 1 ft. 7 in.

Visualize 7 yd. 1 ft. 12 in.
1 ft. 7 in.

7 yd. 5 in.

3. From 5 lb. 4 oz.
take 1 lb. 7 oz.

Visualize 4 lb. 20 oz.
1 lb. 7 oz.

3 lb. 13 oz.

4. 7 yd. 2 ft. 11 in.
—5 yd. 2 ft. 10 in.

5. 1 lb. 7 oz.
— 12 oz.

6. 5 ft. 8 in.
— 2 ft. 11 in.

7. 7 yd. 2 ft. 10 in.
– 1 yd. 1 ft. 11 in.

8. 11 hr. 15 min. 20 sec.
— 10 hr. 20 min. 30 sec.

XL.

Visualize.
Multiply 1 lb. 4 oz.
9

9 lb. 36 oz. -- 11 lb. 4 oz.

9 hr. 15 min.
10

3 ft. 4 in.
6

2 gal. 2 qt. 1 pt.
8

7 gal. 1 qt.
9

XLI.

Visualize.

$\frac{10 \text{ hr. } 15 \text{ min.}}{10}$ 1 hr. 1 1/2 min. or 1 hr. 1 min. 30 sec.

$\frac{45 \text{ hr. } 20 \text{ min.}}{8}$

$\frac{40 \text{ hr. } 320 \text{ min.}}{8}$ Seen at a glance to be 5 hr. 40 min.

$\frac{9 \text{ lb. } 8 \text{ oz}}{6}$ $\frac{6 \text{ lb. } 56 \text{ oz.}}{6}$ 1 lb. 9 1/3 oz.

Divide $\frac{9 \text{ ft. } 11 \text{ in.}}{2}$ $\frac{3 \text{ lb. } 4 \text{ oz.}}{2}$

$\frac{7 \text{ yd. } 2 \text{ ft.}}{4}$ $\frac{7 \text{ yd. } 2 \text{ ft.}}{5}$

XLII.

1. One sugar barrel contains 160 lb. 15 oz. Another, 112 lb. 3 oz. What is the value of the sugar at 8 cents a pound?
2. Four acres of land produce 200 bu. 3 pk. of potatoes. What is the average production per acre?
3. In 3 barrels of vinegar there are 160 gal. 3 qt. 1 pt. How much vinegar in each barrel?
4. A square 11 yd. 11 ft. 6 in. on a side is to be fenced at 3c a foot. What will the fencing cost?
5. At 6 cents an inch, find the cost of 8 yd. 2 ft. 9 in. of wire.

XLIII.

6. A jar of preserves contains 2 qt. 1 pt. 1 gi. How many preserves in 20 jars?
7. 2 gal. 3 qt. 1 pt. were sold from a cask of molasses containing 10 gal. 2 qt. What is the remainder worth at 20 cents a gallon?
8. From a bin containing 25 bu. of oats, 3 bu. 2 pk. 1 qt. were taken. What quantity of oats remained?
9. From a jar containing 7 gal. 2 qt. of vinegar, 3 gal. 1 qt. 1 pt. were sold. What is the remainder worth at 20 cents a gallon?
10. Four bins of wheat contain respectively, 19 bu. 2 pk., 14 bu. 3 pk., 15 bu. 3 pk., and 16 bu. 1 pk. How many pecks in all?
11. A dealer sold on Monday 7 yd. 2 ft. 3 in. of wire, on Tuesday 3 yd. 9 in., on Wednesday 5 yd. 4 in., on Thursday 7 yd. 1 ft. 11 in. How much in all did he sell?

12. 10 jars contain each 1 gal. 1 qt. 1 pt. of pickles. How many in all?
13. 12 pieces of gingham contain each 7 yd. 2 ft. 10 in. How many yards in all?
14. A man works 8 hr. 15 min. 30 sec. each day. How long does he work in 6 days?
15. A boy attends school 5 hr. 15 min. each day. How many hours does he spend in school in 20 days?
16. 9 casks contain 162 gal. of oil. How much in each?

XLIV.

The visualization of problems in decimals is the same as in integers, with the exception of the placing of the decimal point. In addition and subtraction the decimal point occupies in the result a position directly under the point in the addends, and in the minuend and subtrahend.

In multiplication the number of decimal places in the product equals the number in both multiplicand and multiplier.

How many tenths in 1?
How many hundredths in 1?
How many thousandths in 1?
How many ten-thousandths in 1?
How many hundredths in .1?
How many thousandths in .01?

Write one-tenth; nine-tenth; eight-thousandths; five-thousandths; 541 thousandths; 15 thousandths; 17 ten-thousandths; 207 ten-thousandths; 43 ten-thousandths; 15 hundredths; 1 and 104 ten-thousandths;.53 and 76 ten-thousandths; 42 and 9 hundredths.

XLV.

Visualize.

Add	18.4	96.145	40.183
	75.03	20.173	22.175
	6.25	18.426	14.846
	18.42	19.25	90.175
		3.875	

XLVI.

Subtract	87.12	90.124	500
	1.125	3.2756	.125

XLVII.

Multiply	9.7	40.6	50.5	90.12	40.03
	.7	.8	22	8	.04
	72.16	91.12	128	17.5	20.32
	.03	.8	1.1	.021	.08

XLVIII.

In division when a decimal is divided by a whole number place the decimal point in the quotient directly above the decimal point in the dividend, as

1.5 quotient
7.5 dividend
———
5. divisor

Visualize.

$\frac{9.6}{6.}$ $\frac{70.14}{3.}$ $\frac{20.10}{4.}$ $\frac{16.75}{5.}$ $\frac{90.08}{4.}$ $\frac{75.12}{6.}$ $\frac{124.48}{4.}$

XLIX.

Dividing a whole number by a decimal.

$$\frac{18.}{.3} = \frac{180}{3} = 60.$$

Change the divisor to a whole number by multiplying both the dividend and divisor by a power of ten sufficiently large to change them to whole numbers.

$$\frac{16.}{.4} = \frac{160}{4} \quad \text{(multiplied by 10.)}$$

$$\frac{16.}{.04} = \frac{1600}{4} \quad \text{(multiplied by 100.)}$$

Visualize.

$\frac{18.}{.05}$ $\frac{9.}{.03}$ $\frac{75.}{.6}$ $\frac{48.}{.12}$ $\frac{80.}{.16}$ $\frac{40.}{.4}$

L.

Dividing a decimal by a whole number.

$\frac{.25}{5}$ Multiply both terms by 100, to change them to whole numbers

$= \frac{25}{500}$. Reduce to lowest terms by dividing both terms by 25

$= \frac{1}{20}$

$\frac{.75}{6.}$ $\frac{.96}{8.}$ $\frac{.7}{3.}$ $\frac{.18}{6.}$ $\frac{.48}{12.}$ $\frac{.98}{2.}$ $\frac{.27}{3.}$

LI.

Dividing a decimal by a decimal.

$$\frac{.08}{.04} = \frac{8}{4} = 2.$$

Change both terms to whole numbers by multiplying them by the necessary power of ten.

$$\frac{.186}{.3} \quad \frac{.72}{.24} \quad \frac{.51}{.3} \quad \frac{.42}{.6} \quad \frac{.25}{.5} \quad \frac{.75}{.15}$$

$$\frac{.18}{.3} \quad \frac{.125}{.005} \quad \frac{.028}{.002} \quad \frac{.006}{.03} \quad \frac{.006}{.003}$$

LII.

Visualize. Change to whole numbers.

$$\frac{18.25}{.5} \quad \frac{7.5}{1.5} \quad \frac{.6}{.3} \quad \frac{20.4}{.2} \quad \frac{16.8}{.8} \quad \frac{40.15}{.5} \quad \frac{72.5}{.5} \quad \frac{80.6}{.2} \quad \frac{19.5}{5.}$$

$$\frac{43.8}{8.} \quad \frac{76.45}{5.} \quad \frac{180.}{.3} \quad \frac{720.}{.5} \quad \frac{960.}{.12} \quad \frac{825.}{.5} \quad \frac{126.}{1.1} \quad \frac{40.8}{.8} \quad \frac{91.}{.3}$$

LIII.

Visualize. 9/10 of 1128; 7/8 of 324; 9/16 of 1525; 3/4 of 125; 7/8 of 84.

LIV.

Visualize.

900 is 3/4 of what? 250 is 5/9 of what? 720 is 12/15 of what?
600 is 5/9 of what? 750 is 5/6 of what? 800 is 8/9 of what?

LV.

Visualize.

Reduce to lowest terms:

$$\frac{168}{288} \quad \frac{75}{2025} \quad \frac{84}{128} \quad \frac{96}{256} \quad \frac{78}{156} \quad \frac{42}{105} \quad \frac{78}{360}$$

$$\frac{90}{1080} \quad \frac{144}{1728} \quad \frac{52}{260} \quad \frac{38}{190} \quad \frac{62}{155} \quad \frac{84}{210}$$

LVI.

Visualize.

Find cost of:

1. 15 yd. cloth at 10 2/3c a yard.

2. 916 lb. coffee at 23 2/3c a pound.
3. 176 yd. ribbon at 9 3/4c a yard.
4. 125 doz. eggs at 20 4/5c a dozen.
5. 721 tops at 5 2/7c each.
6. 745 in. molding at 3 4/5c each.
7. 916 cards buttons at 2 3/4c a card.
8. 450 qt. of vinegar at 7 1/2c a pint.
9. 12 gross buttons at 6 1/2c a dozen.
10. 48 yd. carpet at $1.12 1/2 a yard.
11. 15 5/9 lb. butter at 30c a pound.
12. 160 doz. eggs at $.15 2/5 a dozen.
13. 915 gal. of oil at $.10 2/3 a gallon.
14. 745 cups at 7 2/3c each.
15. 618 lb. cheese at 8 2/3c a pound.
16. 54 gal. syrup at 3 7/8c a pint.

LVII.

Visualize.

What is 7% of $145? 10% of 968 men? 18 2/3% of 500 miles? 25% of $960? 6% of $1650? 8 2/3% of $840? 12 1/2% of $720? 16 2/3% of $1145? 62 1/2% of 600 yards? 87 1/2% of 2000 miles? 33 1/3% of 916 gallons? 57 1/2% of 400 yards? 85% of 6000 trees? 66 2/3% of 7500 feet? 78% of 6000 bbl. of flour? 16 2/3% of $7600? 54% of 9000 miles? 28% of $4000?

LVIII.

Visualize.

18 is 33 1/3% of what number? 50 is 7% of? 25 is 1/2% of? 40 is 3/8% of? 96 is 5/6% of? 75 is 150% of? 81 is 133 1/3% of? 65 is 5/9% of? 72 is 2/5% of? 112 is 200% of? 600 is 500% of? 748 is 6% of? 320 is 2% of? 180 is 3% of? 960 is 40% of? 720 is 162 1/2% of? 960 is 91 2/3% of?

LIX.

Drill.

1/2 is what % of 100? 1/3? 1/4? 1/5? 1/6? 1/7? 1/8? 1/9? 1/10? 1/12? 1/15? 1/20? 1/25? 1/16? 1/33? 1/40? 1/50? 1/30? 2/3? 3/4? 2/5? 3/5? 4/5? 5/6? 3/8? 7/8? 5/8? 4/25? 7/50? 9/10? 7/10?

LX.

Review. Drill.

144? 12? 3? 8? 160? 640? 5280? 27? 60? 24? 365? 366? 10? 9? 360? 31 1/4? 5 1/2? 20? 16? 2000? 2240? 100? 7? 52? 320? 2? 4?

LXI.

Visualize.

Find the interest on $7500 for 2 years at 6%; $2400 for 3 years at 5%; $9600 for 4 1/2 years at 5%; $7500 for 3 1/2 years at 2%; $1600 for 1 1/2 years at 10%; $6000 for 2 years at 5 1/2%; $7400 for 3 years at 4%; $6800 for 4 years at 2%.

LXII.

$325 is the interest for 5 years. What is the interest for 1 year?
$500 is the interest for 2 years. What is the interest for 1 year?
$600 is the interest for 1½ years. What is the interest for 1 year?
$500 is the interest for 10 years. What is the interest for 1 year?
$800 is the interest for 3 years. What is the interest for 1 year?
$750 is the interest for 6 years. What is the interest for 3 years?
$900 is the interest for 2 years. What is the interest for 3 years?
$600 is the interest for 5 years. What is the interest for 8 years?

LXIII.

Visualize.
How many twelfths in 100? In 30? In 8?
How many twelfths in 7 1/2? In 6 2/3? In 5 2/3?
How many fifteenths in 9? In 8? In 7? In 6 2/3?
How many eighths in 120? In 40 3/4? In 5 1/2?
How many ninths in 16 2/3? In 7 2/3? In 11 1/9?
How many twenty-fifths in 16? In 12 1/2?
How many fourths in 9 3/4? In 7 1/2?
How many thirds in 6 1/3? In 29?
How many fiftieths in 11? In 2? In 12?
How many twenty-fourths in 16? In 4 1/2?
How many sevenths in 6? In 12? In 9?

LXIV.

How many feet in 4 yd.? In 12 2/3 yd.? In 3 mi.?
How many inches in 7 yd.? In 8 2/3 yd.? In 16 1/4 yd.?
How many pounds in 100 oz.? In 75 oz.? In 160 oz.?
How many tons in 9000 lb.? In 8400 lb.? In 16000 lb.?
How many feet in 176 inches? In 94 inches? In 128 inches? In 746 inches?

LXV.

If 3 is 1/3 of a number, what part of the number is 1?
If 6 is 1/2 of a number, what part of the number is 3?
If 8 is 4/5 of a number, what part of the number is 4?

LXVI.

$.75 is 1/3 of a boy's money. How much is 1/2 of it?
$1.50 is 1/5 of a boy's money. How much is 2/3 of it?
$9.60 is 3/4 of a boy's money. What is 1/2 of it?
$5.00 is 5/9 of a boy's money. What is 1/3 of it?

LXVII.

$9.00 is 25% of a boy's money. How much is 75% of it?
$6.50 is 50% of his money. How much is 40% of it?
$.96 is 33 1/3% of his money. How much is 20% of it?
$.48 is 37 1/2% of his money. How much is 75% of it?
$.90 is 62 1/2% of his money. How much is 33 1/3% of it?

LXVIII.

Visualize.

What is the ratio of 1/2 to 1/3? 1/2 to 3/4? 1 to 1/3? 1 oz. to 1 lb.? 1 ft. to 1 mi.? .9 to .3? .7 to .5? 6 lb. to 1 ton? 1 yd. to 1 rod? 7 oz. to 5 lb.? 3 in. to 4 ft.? 2/3 to 7/9? 1/6 to 1/3? 2/5 to 3/4? 9/10 to 7/8? 5/9 to 11/12? 8/25 to 7/10? 9/16 to 3/4? 5/9 to 4/5?

LXIX.

What is 50% of a mile? Of a yard? Of an hour?
What is 33 1/3% of a minute? Of a day?
What is 12 1/2% of $2000? Of $300? Of $16?
What is 75% of 900 acres? Of 600 lbs.? Of a ton?
What is 16 2/3% of $3,300? Of 1,200 yd.?
What is 8 1/3% of $4800? Of $5000? Of a circle?
What is 6 1/4% of $2500? Of 320 rods?
What is 25% of $1896? Of 5280 ft.? Of 1728 cu. in.?
What is 37 1/2% of 144 sq. in.? Of 640 A?
What is 62 1/2% of $8800? Of $1240?
What is 87 1/2% of $7000? Of $2400? Of $3200?
What is 20% of a pound? Of a ton? Of a hundredweight?
What is 40% of .3? Of 8/15? Of 160 square rods?
What is 60% of $1800? Of $750? Of $900?
What is 80% of $420? Of $960?
What is 150% of $480? Of $9000?
What is 133 1/3% of $2000? Of $1200?
What is 175% of 1 foot? 1 ream? 1 quire?
What is 6 2/3% of $30? Of $16.50? Of $82.50?
What is 5% of $1000? Of $8000? Of $5160? Of $3750?
What is 6% of $9000? 106% of $9000?

LXX.

$5 is 5%. What is 1%? 100%?
$10 is 5%. What is 1%? 100%?
8 is 4%. What is 1%? 100%?
24 hours is 20%. What is 100%?
24 hours is 33 1/3%. What is 100%?
60 minutes is 25%. What is 100%?
7 days is 7%. What is 35%?
$12 is 12 1/2%. What is 87 1/2%?
$9 is 5%. What is 20?%
$160 is 33 1/3%. What is 100%?
$50 is 6 1/4%. What is 100%?
2000 lb. is 8 1/3%. What is 200%?
10 men are 50% of a number of men. How many in all?
$8 is 25%. What is 75%?
16 2/3% of a number is 90. What is 100%?
$100 is 75%. What is 150%?
$300 is 80%. What is 60%?
$.15 is 33 1/3%. What is 100%?

LXXI.

Visualize.

What is the ratio of 12 1/2% to 100%? To 25%? To 37 1/2%? To 50%? To 62 1/2%? To 87 1/2%?

What is the ratio of 25% to 12 1/2%? 50% to 12 1/2%? 100% to 12 1/2%? 75% to 100%?

How many times is 12 1/2% contained in 62 1/2%? In 37 1/2%? In 87 1/2%? In 100%?

What is the ratio of 20% to 100%? 100% to 20%? 20% to 80%? To 60%? To 40%? 80% to 20%? 40% to 20%?

What part of 100% is 20%? Of 80% is 20%? Of 60% is 20%?

How many times is 20% contained in 60%? In 80%? In 40%? In 120%?

60% is how many times 20%? 40% is how many times 20%?

16 2/3% is what part of 100%? Of 83 1/3%?

What is the ratio of 16 2/3% to 100%? To 83 1/3%?

What is the ratio of 100% to 16 2/3%? 83 1/3% to 16 2/3%?

What is the ratio of 25% to 50%? To 75%? To 100%?

What is the ratio of 100% to 25%? To 50%? To 75%?

What part of 100% is 25%? 50%? 75%?

LXXII.

Visualize.

100 ×
80
30
72 1/2
54 1/4
160

1000 ×
960
4.5
7.3
9 4/5
1 1/2

10 ×
3.7
4.08
9 4/5
6 7/8
328

10,000 ×
7 4/5
9 1/5
8 3/10
100
6.8
408

Divide by 10
900
863
724
96.5
80.37
900.1

Divide by 100
9.6
104.3
75.906
400000
91642

Divide by 1000
46583
18.75
20496
725
836

Divide by 10,000
71486
196327
408.038
9161753

LXXIII.

Visualize.

Divide $\frac{10000}{25}$ by $\frac{10}{25}$; $\frac{90}{8}$ by $\frac{9}{8}$; $\frac{725}{5}$ by $\frac{4}{5}$;

$\frac{960}{23}$ by $\frac{12}{23}$; $\frac{840}{7}$ by $\frac{9}{7}$; $\frac{625}{8}$ by $\frac{12}{8}$;

$\frac{746}{9}$ by $\frac{11}{9}$; $\frac{749}{10}$ by $\frac{16}{10}$; $\frac{425}{3}$ by $\frac{25}{3}$

LXXIV.

Divide 100 by 1/2; 300 by 1/3; 400 by 2/3; 250 by 5/6.
How many thirds in 800? In 750?
How many ninths in 50? In 81? In 70?
How many two-thirds in 1? In 3? In 5?
How many three-fourths in 4? In 8? In 6?
How many seven-eighths in 1? In 2? In 3?
How many five-sixteenths in 1? In 2? In 3?
How many nine-tenths in 1? In 2? In 4?
How many five-twelfths in 1? In 2? In 5?
How many two-sevenths in 1? In 2? In 3?

LXXV.

Visualize.

Change to decimals:

1/2, 1/4, 1/3, 3/4, 1/6, 1/20, 3/4, 1/5, 1/8, 1/25, 3/8, 5/8, 4/5, 7/8, 9/10, 1/50, 1/12, 7/12, 15/20, 1/40, 1/30.

LXXVI.

.25 .72 .036 .18 .195 .0038 .526
.8375 .9075 .831 .525 .8466 .7125 .9064 .3127

LXXVII.

How many halves in 18 1/2?
How many thirds in 37 1/3?
How many fortieths in 96 11/40?
How many eighths in 75 3/8?

LXXVIII.

Review:
4 gills = 1 pint.
3 feet = 1 yard.
5280 feet = 1 mile.
60 seconds = 1 minute.
60 minutes = 1 hour.

7 days = 1 week.
160 square rods = 1 acre.
640 acres = 1 square mile.
320 rods = 1 mile.
2 pints = 1 quart.
8 quarts = 1 peck.
24 sheets = 1 quire.
20 quires = 1 ream.
360° = 1 circle.
1728 cubic inches = 1 cubic foot.
27 cubic feet = 1 cubic yard.
12 inches = 1 foot.
30 1/4 square yards = 1 square rod.
9 square feet = 1 square yard.
16 1/2 feet = 1 rod.
4 pecks = 1 bushel.
24 hours = 1 day.

LXXIX.

Write:

83,724,906
23,708,801
49,586,725
93,928,556
72,768,103
10,108
11,320
9,506
70,010,040
96,954,921
396,008
721,196
50,001
99,099,099
16,165,083
21,021,017
59,162,138
72,072,106
9,212,008
8,008,096
1,010,010
7,724,065

9,308,811
7,500,001
2,096,015
3,110,083
7,725,096
842,180
321,720
516,384
965,620
11,725
90,160
83,008
800,001
3,108
7,964
128,129,032
54,728,316
99,038,725
50,000,125

BULLETIN NO. 48

STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

ARITHMETIC

Prepared by Miss Sarah M. Nicholson, County Normal Supervisor.

SIXTH GRADE.

Materials: artificial coins, colored sticks, colored blocks, squares, cubes, cylinders, spheres, cones, prisms, colored cards, beans, corn, sand, clay, measures (gill, pint, quart, peck, bushel), foot rulers, yard sticks, scales.

Visualize daily as in the fifth, increasing the difficulty of problems. Add to the work problems in decimals, addition, subtraction, multiplication and division.

Give much drill in reducing fractions to higher and lower terms, adding, subtracting, multiplying and dividing, changing of improper fractions to whole or mixed numbers, and mixed numbers to improper fractions.

Drill on the aliquot parts. Drill on denominate number tables, and in adding, subtracting, multiplying and dividing denominate numbers. Also in reduction ascending and in reduction descending.

Make very clear the fact that decimals, percentage and fractions express the same quantities and values.

Make out receipts and bills. Teach interest for years and months.

Review denominate numbers in concrete problems and in drills. Learn pounds in bushels of wheat, corn, oats, potatoes.

Finish work in Roman numerals. Continue work in measuring, weighing, counting, estimating and do more abstract work than in the previous grades. The pupils will depend less on the objects than formerly, but use as much as is necessary. Dramatize to find every new principle.

Find the cost of painting a wall 10 ft. high, 20 ft. long and 15 ft. wide, at 30c a sq. yd.

Measure floors and estimate cost of paint. Measure baseboards about the rooms and estimate cost of lumber and paint. Measure floors for carpet and find cost. Learn best method of laying them. Find the cost of a rug 15 ft. by 18 ft. at $1.50 a sq. yd.

Find the cost of a concrete walk. Find the length and width and learn the cost of cement, labor, etc., and estimate the cost.

Find how much it will cost to paper the schoolroom. Learn prices of labor, paper, border, length of rolls, width of paper, and solve. Estimate the cost of papering other rooms. Estimate the cost of building a chimney. Estimate the cost of a roof. State dimensions. Learn how shingles are placed, number in a bundle. Estimate the cost of excavating a cellar. How many cubic feet to a load? Cost of a load. Dimensions of cellar. Estimate tthe cost of building fences, walls, walks. Estimate capacities of bins, cellars, cisterns. Estimate cost of molding and glass for pictures, molding for rooms.

Give many drill problems in cost as, 25 yd. of cloth at $1.75 a yard, 48 bu. of oats at 70c a bushel, in the visualizing drills and use short methods, aliquot parts wherever possible.

Teach interest as rent for the use of money. I borrow a dollar for a year and pay $.06 for it. How much do I pay at the end of a year? Of two years? The interest on $1 for a year is $.06, what is the interest for 5 years? What is the interest for 2 years? The amount is the principal plus the interest. Dramatize simple problems. Let a pupil act as banker. Let other pupils borrow money for a certain time. The other pupils will act as clerks and find how much interest will be due, the amount, etc.

Show with the globe what is meant by longitude and time. There are 360° in a circle. Each point on the earth passes through 360° in 24 hours. In 1 hour it travels through 1/24 of 360° or 15°.

Then one hour corresponds to 15°. 15° difference in longitude makes one hour's difference in time. Give many simple problems. How far apart are places that have 8 1/2 hr. difference in time? How far apart are places that have 12 hours difference in time? If a place is 90 degrees east of another, how many hours difference in time have they?

Let the idea take root. Give simple problems, many of them, but do not enlarge upon it or introduce intricate problems, or hours and minutes, until the next grade. Make the simple idea of difference in time caused by longitude, very clear.

I.

Read:

128,725
903,042
1,584,176
10,000,000
10,038,075
1,000,000,000
1,500,000,000

90,025,096
438,170
100,000,000
125,000,000
136,000,000
1,124,126
1,042,042

II.

Write:
9 hundred 27 million, 3 hundred 6.
4 million, 81 thousand, 12.
1 hundred 7 billion, 26 million, 5 hundred thousand, seven.
4 million, 40 thousand, 14.
5 billion, 3 million, 6 thousand, three.
9 hundred 28 billion, 712 million, 326.
5 hundred 28 billion, 712 million, 326 thousand, eight.

III.

Write:
Seven hundred 5 thousand and 18 ten-thousandths.
9 hundred 16 thousand, twenty-seven and 5 millionths.

842 thousand, 612 and 75 hundred-thousandths.
112 thousand, eight hundred two, and 15 millionths.
2 hundred 8 thousand and 11 thousandths.
15 million and 15 millionths.
9 thousand, 7 hundred 12 and 11 hundred-thousandths.
625 million and seven millionths.
208 thousand, 7 hundred 6 and 1 hundred 18 hundred-thousandths.
98 thousand, one hundred twenty-five ten millionths.
15 hundred thousandths.
7 hundred 16 hundred-thousandths.
1 hundred 9 millionths.
15 thousand, 6 hundred 12 millionths.
8 thousand, 9 hundred 6 ten-thousandths.
15 millionths.
9 hundred 8 thousandths.

IV.

Read:

9,284.028
7,106.000,129
924.001,096
12.025,036
7.129,721
129,001.000,000,1
228,126.005
725.000,106,9
128.001,003,005
54.126,703,92
12.012
12.001,2
12.000.12
12.000,012
12.000,012,5
72.72
72.007,2
72.000,000,72
96.015,834,176

4,238,176.00,019
721,140.0,124
12,165.032
168.017
42.000,1
9.000,01
7.0203
196.1325
8,325,196.007
141,081.012
.000,34
.000,001
10.01
1.001
1.000,1
1.000,001
1.010,101
80.084,084
1.096,04
1.721,638

V.

Visualize.

Add
964.0127
521.0036
524.1928
721.1625
328.4124
516.1723

VI.

Subtract

$$\begin{array}{r} 7486.0325 \\ 1237.1924 \\ \hline \end{array}$$

VII.

Multiply

$$\begin{array}{r} 225 \\ 15 \\ \hline \end{array} \quad \begin{array}{r} 3212 \\ 22 \\ \hline \end{array} \quad \begin{array}{r} 328 \\ 12 \\ \hline \end{array} \quad \begin{array}{r} 7245 \\ 21 \\ \hline \end{array} \quad \begin{array}{r} 212 \\ 15 \\ \hline \end{array}$$

$$\begin{array}{r} 906 \\ 14 \\ \hline \end{array} \quad \begin{array}{r} 1843 \\ 20 \\ \hline \end{array} \quad \begin{array}{r} 721 \\ 21 \\ \hline \end{array} \quad \begin{array}{r} 1645 \\ 18 \\ \hline \end{array}$$

$$\begin{array}{r} 142 \\ 19 \\ \hline \end{array} \quad \begin{array}{r} 625 \\ 25 \\ \hline \end{array} \quad \begin{array}{r} 154 \\ 16 \\ \hline \end{array} \quad \begin{array}{r} 408 \\ 24 \\ \hline \end{array}$$

VIII.

Divide

$$\frac{842}{21} \quad \frac{716}{19} \quad \frac{325}{18} \quad \frac{421}{16}$$

$$\frac{221}{13} \quad \frac{906}{14} \quad \frac{728}{15} \quad \frac{512}{21}$$

$$\frac{225}{25} \quad \frac{648}{24} \quad \frac{321}{23} \quad \frac{816}{22}$$

$$\frac{742}{17} \quad \frac{509}{18} \quad \frac{328}{19}$$

IX.

Square 2, 4, 3, 5, 6, 7, 8, 9, 10, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25. Learn squares.

X.

Cube 2, 3, 4, 5, 6, 7, 8, 9, 10. Learn cubes.

XI.

Raise to the 4th power 2, 3, 4, 5, 6.

XII.

Visualize.

Add	$25.25
	19.025
	206.172
	834.025
	95.125
	2.225

XIII.

Subtract	$10,000.	$7296.50
	325.65	1248.012

XIV.

Multiply	$3.25	$18.45	$25.40
	16	25	24

XV.

Divide	$18.75	$30.15	$40.125	$16.50	$25.50
	2	9	3	40	50
	$75.125	$18.75	$62.50	$75.00	$80.50
	5	13	15	14	15

XVI.

Visualize.

Divide	19.225	12.24	7.21	4.085	9.28	16.16
	.05	.003	2	.03	.05	.12

XVII.

Multiply	8.33	7.25	9.65	7.42	8.12	3.25	
	.02	.04	.12	1.2	1.4	.25	
	5.06	9.31	7.25	1.28	6.75	6.75	
	.04	.03	8	3	5	.5	
	6.75	8.12	812	81.2	812	812	5.5
	.05	1.2	12	12	.012	1.2	5.5

XVIII.

Visualize.

Add	16 3/4	12 1/8	15 2/3
	5 2/3	71 1/2	13 1/8
	9 1/5	96 11/24	9 1/6
	7 11/30	30 5/12	7 5/6

XIX.

Subtract	8016 2/25	7125 11/25
	1125 3/5	2043 4/6

XX.

Multiply	18 3/4	25 1/5	12 1/3
	2 1/2	3 1/8	6 2/5

XXI.

Divide	180 by 2/3	900 by 5/6	724/3 by 2/3
	3	6	

XXII.

Change to similar denominators and divide numerators:
1/2 by 2/3 = 3/6 by 4/6 = 3/4
2 1/2 by 1 1/3 = ? 7 1/2 by 1 1/5 = ? 11/25 by 1/3 = ?
7/24 by 5/8 = ? 9/10 by 1/5 = ? 4/18 by 1/6 = ?
7/12 by 1 1/2 = ? 9/10 by 2 1/3 = ?

XXIII.

Visualize.

Cancel
1/2 × 2/3 × 5/9 × 4/3
1/6 × 3/4 × 12/15 × 7/8
2/4 × 2 1/2 × 3/6 × 4 1/2
11/25 × 2/3 × 1/2 × 7/8
9/10 × 11/12 × 2/3 × 5/6
5/9 × 18/25 × 2/3 × 4/5

XXIV.

Divide

900 1/2 by 2 1/2	4 11/12 by 3/24	96/25 by 4/5
2/3 by 3/8	7 1/2 by 2 1/4	9/16 by 3/4
7/25 by 11/25	25/3 by 5/6	9/10 by 5/11
7/12 by 12/36	1 1/5 by 1 1/3	2 1/2 by 1 1/3
7 1/8 by 2 1/5	9 11/12 by 2 1/3	

XXV.

Visualize.

1/2 of 2/3	5/9 of 7/8	1/6 of 3/8
2/3	1/2	1/4

$\dfrac{2/5 \text{ of } 1\ 1/2}{1/3}$ $\dfrac{7/8 \text{ of } 1/3}{1/8}$ $\dfrac{4/5 \text{ of } 11/12}{2/3}$

$\dfrac{5/9 \text{ of } 7/15}{1/8}$ $\dfrac{16/25 \text{ of } 11/12 \text{ of } 1/3}{1/2}$ $\dfrac{19/38 \text{ of } 12}{2}$

$\dfrac{7/8 \text{ of } 1/4}{2/3}$ $\dfrac{9/16 \text{ of } 25}{4/5}$ $\dfrac{7/8 \text{ of } 12}{36}$

$\dfrac{75/80 \times 3/5 \times 1/2}{10}$ $\dfrac{16/125 \text{ of } 1/10}{5}$ $\dfrac{7/9 \text{ of } 12}{8}$

$\dfrac{8/9 \text{ of } 36}{4}$ $\dfrac{7/12 \text{ of } 125}{5}$ $\dfrac{9/10 \text{ of } 120}{16}$

$\dfrac{7/8 \text{ of } 32}{25}$ $\dfrac{1/9 \text{ of } 1/3 \text{ of } 2/5}{4/5}$ $\dfrac{7/8 \text{ of } 1\ 1/2 \text{ of } 3/4}{6}$ $\dfrac{5/9 \text{ of } 1/2}{6}$

XXVI.

Short Methods.

Learn:

12 1/2% = 1/8
25% = 1/4
37 1/2% = 3/8
33 1/3% = 1/3
20% = 1/5
62 1/2% = 5/8
87 1/2% = 7/8
16 2/3% = 1/6
11 1/9% = 1/9
10% = 1/10
3 1/3% = 1/30
2 1/2% = 1/40
2% = 1/50
5% = 1/20

XXVII.

Find 33 1/3 times the following numbers by adding two ciphers and dividing by 3. Since .33 1/3 = 1/3 so 100 times .33 1/3 = 1/3 of 100 times the number multiplied.

33 1/3 × 16
33 1/3 × 8180
33 1/3 × 8164
33 1/3 × 9141
33 1/3 × 1264
33 1/3 × 180
33 1/3 × 1560
33 1/3 × 5481
33 1/3 × 6284
33 1/3 × 4288
33 1/3 × 5276
33 1/3 × 2176
33 1/3 × 1240
33 1/3 × 4280

XXVIII.

.25 = 1/4. Also 100 times .25 = 1/4 of 100 times the number multiplied. Then to find 25 times a number, add two ciphers and divide by 4.

25 × 600
25 × 1742
25 × 984
25 × 8436
25 × 9176
25 × 4183
25 × 6242
25 × 8184
25 × 4164
25 × 8133
25 × 7128
25 × 9184

XXIX.

.37 1/2 = 3/8 and 100 times .37 1/2 = 3/8 of 100 times the number multiplied; so add two ciphers and multiply by 3/8.

37 1/2 × 1000
37 1/2 × 500
37 1/2 × 126
37 1/2 × 408
37 1/2 × 116
37 1/2 × 6825
37 1/2 × 960
37 1/2 × 128
37 1/2 × 916
37 1/2 × 562
37 1/2 × 280
37 1/2 × 480
37 1/2 × 2140
37 1/2 × 512
37 1/2 × 448

XXX.

62 1/2% = 5/8. 100 × .62 1/2 = 5/8 of 100 times the number multiplied. Add 2 ciphers and multiply by 5/8.

62 1/2 × 680
62 1/2 × 125
62 1/2 × 320
62 1/2 × 860
62 1/2 × 72
62 1/2 × 48
62 1/2 × 40
62 1/2 × 65
62 1/2 × 100

XXXI.

3/4 = 75%. 100 × .75 = 3/4 of 100 times the number multiplied. Add two ciphers and multiply by 3/4.

75 × 600
75 × 900
75 × 160
75 × 160
75 × 512
75 × 450
75 × 480
75 × 360
75 × 800
75 × 625
75 × 184
75 × 1600

XXXII.

12 1/2% = 1/8. 100 × .12 1/2 = 1/8 of 100 times the number multiplied. Add 2 ciphers and multiply by 1/8.

12 1/2 × 1600
12 1/2 × 300
12 1/2 × 320
12 1/2 × 180
12 1/2 × 160
12 1/2 × 400
12 1/2 × 25
12 1/2 × 144
12 1/2 × 160

XXXIII.

50% = 1/2. .50 × 100 = 1/2 of 100 times the number multiplied. Add two ciphers and multiply by 1/2 or divide by 2.

50 × 1864
50 × 9063
50 × 7165
50 × 9746
50 × 9152
50 × 1895
50 × 8184
50 × 1846
50 × 2276

XXXIV.

66 2/3% = 2/3. .66 2/3 × 100 = 2/3 of 100 times the number multiplied. Add two ciphers and multiply by 2/3.

66 2/3 × 480
66 2/3 × 3140
66 2/3 × 208
66 2/3 × 124
66 2/3 × 8160
66 2/3 × 5176
66 2/3 × 75
66 2/3 × 519
66 2/3 × 846

XXXV.

87 1/2% = 7/8. Add two ciphers and multiply by 7/8.

87 1/2 × 9000
87 1/2 × 888
87 1/2 × 440
87 1/2 × 60
87 1/2 × 3000
87 1/2 × 512
87 1/2 × 50
87 1/2 × 164
87 1/2 × 206

XXXVI.

Visualize.

816 × 2000; 325 × 3000; 728 × 400; 956 × 9000;
723 × 10000; 846 × 1000; 729 × 5000; 832 × 50;
616 × 60; 712 × 70; 843 × 800; 956 × 900;
721 × 800; 328 × 2000; 729 × 5000; 586 × 1200;
725 × 1100; 328 × 800; 621 × 900; 325 × 800.

725 ÷ 200; 3284 ÷ 1000; 32764 ÷ 2000; 9176 ÷ 3000;
4140 ÷ 2000; 21684 ÷ 1000; 51496 ÷ 5000; 21274 ÷ 3000;
81000 ÷ 2000; 45000 ÷ 2000; 25000 ÷ 9000; 16432 ÷ 2000;
48000 ÷ 12000; 72000 ÷ 6000; 25000 ÷ 3000; 20000 ÷ 2000.

XXXVII.

Visualize.

What is the L. C. M. of 12, 24, 36, 48; 2, 4, 9, 7, 6, 5; 3, 7, 4, 5; 2, 4, 6, 3, 7; 2, 4, 6, 8; 12, 15, 60; 24, 12, 60, 72; 11, 24, 121; 25, 125, 10; 25, 12, 150, 50; 14, 7, 9, 8, 4; 2, 9, 7, 6, 8; 3, 8, 7, 5, 6, 4; 2, 4, 6, 8, 10, 12; 125, 400; 208, 320; 200, 300, 400; 100, 50, 75; 16, 25, 50, 60.

What is the G. C. D. of 11, 25, 36; 7, 21, 49, 63; 2000, 3000, 4000; 9000, 10000, 12000; 18, 15, 36, 12, 72; 34, 68, 170; 240, 60, 120; 72, 360, 80; 15, 80, 90, 75; 81, 45, 72, 108; 121, 55, 99, 242; 72, 36, 90; 56, 112, 224, 168; 25, 50, 80, 60; 80, 32, 128; 75, 50, 90, 30; 12, 20, 16; 48, 32, 76.

XXXVIII.

Visualize.

12 1/2% of 726; 824; 905; 320; 408.
4% of 160; 620; 780; 590; 860.
5% of 300; 206; 708; 910; 4848.
6% of 165; 320; 846; $41.50.
7% of $184.40; $625.50; $916; $812.
8% of $200; $116.50; $2176; $4000.
9% of 1760; 4184; 3125; 9164.
10% of 2183; 1846; 97654; 81284.
20% of 9175; 3180; 4164; 2125.
25% of 4216; 4184; 3175; 2184.
33 1/3% of 8460; 4000; 5190.
40% of 1840; 2160; 1142; 5965; 3200.
50% of 2840; 1860; 7164; 3120; 1240.
60% of 6190; 116; 328; 425; 500.
70% of 112; 308; 516; 724; 542.
80% of 115; 200; 306; 408; 215.
62 1/2% of 160; 2000; $164.40; $80.
87 1/2% of $5000; $7240; $5160; $2000.
66 2/3% of $5000; $8000; $7160; $4200.
16 2/3% of $7200; $4800; $9600; $8480.

XXXIX.

Visualize.
Find 100%.
$100 = 16 2/3 %. $50 = 6 1/4%. $90 = 5%. $80 = 5%.
$75 = 50%. $6.50 = 33 1/3%. $18 = 66 2/3%. $75 = 25%.
$12.50 = 10%. $900 = 50%. $720 = 6 1/4%. 24 = 2%.
9 men = 75%. 180 hours = 25%. $240 = 150%. $10,000 = 500%.
$400 = 87 1/2%. $160 = 62 1/2%. $32 = 12 1/2%. $215 = 33 1/3%.
$212 = 66 2/3%. 18 3/4 = 75%. 5 1/2 = 10%. 17 1/2 = 50%.
900 1/3 = 16 2/3%. 5 5/9 = 6 1/4%. 780 = 25%. 150 = 11 1/9%.
225 = 40%. $816 = 80%. 900 bushels = 4%. 800 gallons = 2%.
906 1/2 = 33 1/3%. 512 yd. = 75%.

XL.

Visualize.
3 1/3 is what per cent of 1/3.
2 is what per cent of 1 1/2.
1 is what per cent of 25.
8 is what per cent of 160.
3/4 is what per cent of 2 1/2.
7/8 is what per cent of 5/16.
3 is 1/3% of what number.
9 is 1/2% of.
18 is 1/6% of.
5 is 1/4% of.
8 is 10% of.
12 is 12 1/2% of.
15 is 25% of.
16 is 8% of.

6 is 75% of.
3/4 is 75% of.
8 is 120% of.
25 is 10% of.
9 is 300% of.
4 is 200% of.
816 is 33 1/3% of.
1200 is 25% of.
18 is 4% of.
16 is 2% of.
120 is 5% of.
325 is 25% of.
165 is 8% of.
40 is 15% of.

XLI.

Visualize.

Goods bought at $112.50, sold for $100.	Loss per cent.
Goods bought at $150 sold for $125.	Loss per cent.
Goods bought at $2000 sold for $3000.	Gain per cent.
Goods bought at $1600 sold for $1500.	Loss per cent.
Goods bought at $9000 sold for $10,000.	Gain per cent.
Goods bought at $1000 sold for $1500.	Gain per cent.
Goods bought at $.50 sold for $.75.	Gain per cent.
Goods bought at .16 sold for .18.	Gain per cent.
Goods bought at .15 sold for .16.	Gain per cent.
Goods bought at .05 sold for .06.	Gain per cent.
Goods bought at .03 sold for .04.	Gain per cent.
Goods bought at .02 sold for .04.	Gain per cent.
Goods bought at .10 sold for .12 1/2.	Gain per cent.
Goods bought at $100 sold for $160.	Gain per cent.
Goods bought at $.15 sold for $.16.	Gain per cent.
Goods bought at .12 1/2 sold for .10.	Loss per cent.
Goods bought at $16 sold for $15.	Loss per cent.
Goods bought at $12 sold for $10.	Loss per cent.
Goods bought at $5 sold for $6.	Gain per cent.

XLII.

Visualize.
30 is 5% of what number.
9 is 10% of what number.
11 is 25% of what number.
25 is 16 2/3% of what number.
16 is what per cent of 25. 16/25 =.
25 is what per cent of 80.
12 is what per cent of 200.
17 is what per cent of 300.
18 is what per cent of 12.
9 is what per cent of 2.
$7 is what per cent of $21.
8 bu. is what per cent of 160 bu.
125 bu. is what per cent of 800 bu.
24 bu. is what per cent of 120 bu.
5 yards is what per cent of 25 yd.
18 ft. is what per cent of 10 yd.
1000 ft. is what per cent of 3000 ft.
26 in. is what per cent of 130 in.
18 hours is what per cent of 360 hours.

XLIII.

What is the interest on $1000 at 4 1/2% for 1 year? For 2 years? For three years?
Interest on $187.50 at 6% for 1 year? 2 yr.?
Interest on $200.12 at 6% for 1 yr.? 2 yr.?
Interest on $195.16 at 6% for 1 yr.? 2 yr.?
Interest on $218.30 at 6% for 1 yr.? 2 yr.?
Interest on $75.15 at 6% for 1 yr.? 2 yr.?
Interest on $18.40 at 6% for 1 yr.? 2 yr.?
Interest on $2.16 at 6% for 1 yr.? 2 yr.?
Interest on $100.50 at 6% for 1 yr.? 2 yr.?
Interest on $926.50 at 6% for 1 yr.? 2 yr.?
Interest on $125.40 at 6% for 1 yr.? 2 yr.?
Interest on $218.45 at 6% for 1 yr.? 2 yr.?
Interest on $1600 at 6% for 1 yr.? 2 yr.?
Interest on $725 at 6% for 1 yr.? 2 yr.?
Interest on $920 at 6% for 1 yr.? 2 yr.?
Interest on $1600 at 6% for 1 yr.? 2 yr.?
Interest on $140 at 6% for 1 yr.? 2 yr.?
Interest on $275.50 at 5% for 1 yr.? 2 yr.?
Interest on $916.50 at 6% for 1 yr.? 2 yr.?
Interest on $800.40 at 6% for 1 yr.? 2 yr.?

XLIV.

What is the interest on $217.50 for 1 yr. at 4% ? For 1 mo.? On $600? On $812? On $325.50? On $400.50? On $628.12? On $3240? On $1620? On $900 at 5% for 1 mo.? On $800 for 6 mo. at 5% ? On $525 for 6 mo. at 5% ? On $480? On $324? On $216? On $800? On $725? On $116? On $200? On $728? On $900? On $1000.50?

XLV.

What is the interest for 3 months at 5% on $8000? On $1625? On $720? On $118.75? On $150?

What is the interest for 2 months at 6% on $1800? $1600? On $720? On $500? On $840?

What is the interest for 5 1/2 years at 6% on $812? $725? $480? $616? $308? $450?

What is the interest for 9 months at 8% on $750? $500? $480? $660? $720? $840? $916.50?

What is the interest for 1 year 4 months at 6% on $2000? $3100? $4200? $450? $916? $720?

What is the interest for 3 years 2 months at 6% on $8000? $720? $165? $200? $405? $703?

What is the amount of $500 for 2 years 3 months at 4%? Of $625? Of $75.80? Of $12.50? Of $216?

What is the amount of $6240 for 2 years 4 months at 6%? Of $725? Of $380? Of $916? Of $512? Of $400?

XLVI.

How many days from Jan. 1 to June 7? April 19, 1901 to March 25, 1902?

Dec. 18, 1895 to Jan. 15, 1906? May 3, 1901 to June 8, 1901?
Dec. 12, 1895 to Jan. 15, 1907? April 1, 1902 to June 9, 1903?
May 3, 1901 to June 10, 1902? May 1, 1901 to August 15, 1901?
Jan. 8, 1905 to Oct. 12, 1905? Feb. 3, 1906 to Dec. 12, 1906?
Dec. 1, 1907 to June 18, 1909? Aug. 11, 1908 to July 25, 1909?
Aug. 10, 1909 to Jan. 1, 1910? May 18, 1909 to Jan. 15, 1910?
May 20, 1909 to Aug. 12, 1910? Apr. 10, 1909 to Oct. 15, 1910?
May 7, 1910 to Oct. 12, 1910? Jan. 3, 1909 to Feb. 12, 1910?
Jan. 12, 1909 to Aug. 15, 1910? June 16, 1909 to May 1, 1910?

XLVII.

Visualize.

What is the interest on $158 at 6% for 27 days?

$$\frac{27}{360} = 3/40 \text{ of } 94.8 = ?$$

On $75.50 for 150 days at 8%? On $16.50 for 81 days at 5%? On $7.25 for 40 days at 10%? On $160 for 160 days at 6%? On $3000 for 36 days at 5%? On $9200 for 40 days at 6%? On $1000 for 25 days at 4%? On $1660 for 120 days at 7%? On $6950 for 140 days at 5%? On $3280 for 120 days at 6%? On $250 for 10 days at 5%? On $4000 for 48 days at 6%? On $2200 for 52 days at 6%? On $3250 for 49 days at 8%? On $1640 for 80 days at 7%? On $3280 for 40 days at 4%? On $1650 for 36 days at 10%?

XLVIII.

Visualize.

What principal will yield $30 per year at 6%? $50 at 5%? $72 at 6%? $18 at 3%? $15.50 at 2%? $180 at 5%? $720 at 4%? $980 at

5%? $1000 at 4%? $320 at 2%? $375 at 3%? $1650 at 3%? $2000 at 4%? $5160 at 3%? $70 at 3 1/2%? $1100 at 5 1/2? $800 at 10%? $75 at 2%? $900 at 5%?

XLIX.

TAXES

Taxes are moneys paid by a community for the support of government, public improvements, etc., and are levied on various kinds of property. In a town, village or city a three per cent tax means that citizens owning property will pay three per cent of its value to the town treasurer. The tax valuation of property is fixed by the assessors.

Usually a poll tax is also levied. A poll, or per capita tax, is a certain sum to be paid by every male citizen of or over twenty-one years of age.

INSURANCE

Persons owning property may be insured from loss by fire by paying to an insurance company a certain per cent on a partial value of the property each year. Property is rarely insured for its full value.

The money paid for an Insurance Policy is called the *Premium.*

An Insurance Policy is a contract between the insured and the insurance company fixing the conditions to which both parties must agree.

Mr. Smith owns a house valued at $5000. It is insured for 4/5 of its value at ½%. This means that the house is insured for $4000, which sum will be paid to Mr. Smith in case the house is destroyed by fire; and that for this assurance, Mr. Smith must pay the company annually ½% of $4000, or $20 premium. The *agent* or *underwriter* representing the company writes out a Policy to this effect which Mr. Smith holds.

COMMISSION

The buying and selling of goods cannot always be done directly by the producers and consumers. The farmer cannot sell his grains and fruits directly to the people who use them. Stock-raisers may be very far from the markets where people buy the products of their cattle. Much of the work of buying and selling is done by Commission Agents who transfer the goods, receiving for their services a certain per cent of the sales.

Mr. Watson, a commission merchant in Chicago, receives from Farmer Hanson in Michigan a consignment of 10,000 bbl. of apples which he sells to merchants at $2.50 a barrel.

Mr. Watson sells the fruit at a commission of 3%. 3% of his receipts, $25000, equals $750 which he keeps for his share of the transaction.

Visualize.

At 1/2% tax, find the tax on property valued at $7500. At 1 1/2%, on $4000. At 2%, on $2250. At 4%, on $1625. At 3/8%, on $1640. At 3/4%, on $2200. At 1/6%, on $2400. At 1/5%, on $1800. At 3/5%, on $2250. At 1 1/3%, on $1500. At 2 1/2%, on $4000. At 3 1/3%, on $12000. At 2%, on $16000. At 1 1/2%, on $4400. At 3%, on $1625. At 2%, on $1420. At 7/8%, on $2160. At 3/5%, on $1440. At 1/4%, on $2140.

L.

Property valued at $60,000 is insured at 3/4 of its value at 1/2%. What is the premium?

Property valued at $9000 is insured for 2/3 of its value at 1/4%. What is the premium?

Property valued at $8,500, insured for 4/5 of its value at 1/2%.

Property valued at $10,500, insured for 4/5 of its value at 1/4%.

Property valued at $6500, insured for 3/5 of its value at 1/3%.

Property valued at $18560, insured for 3/4 of its value at 1/2%.

If $90 is the premium on property insured for 2/3 of its value at 1/2%, what is the value of the property?

What is the value of property insured for 3/4 of its value at 2/3%, when the premium is $30?

What is the value of property insured for 2/3 of its value at 3/8%, when the premium is $36?

My taxes are $350. The rate is 1 3/4%. What is the assessed value of the property?

How much insurance does a man receive for $25 when the rate is 2 1/2%?

LI.

The tax on an assessment of $8500 is $96.90. What is the rate on $1000 of assessment?

What is the amount of an agent's sales when his commission at 4% amounts to $18.80?

A man insured his house for $8200, his store for $9200 and his goods for $10500, at 1/2%. What did his premium amount to?

I paid $54 for an insurance policy on my house. If the rate is 3/8% for how much is my house insured?

My agent collected 60% of a debt of $9000 charging 4% commission. What was his commission and what sum should he have paid over?

What is the amount of an agent's sales when his commission amounts to $31.15 at 5%?

LII.

Visualize.
Add

12 lb. 8 oz.
5 " 9 "
25 " 3 "
28 " 4 "
72 " 6 "

11 bu. 3 pk.
6 " 2 "
2 "
4 " 1 "
2 " 2 "
3 " 1 "

4 min. 30 sec.
12 " 15 "
8 " 35 "
9 " 12 "
16 " 40 "

4 ft. 9 in.
2 " 6 "
7 " 7 "
11 " 3 "
2 " 4 "
4 " 1 "

3 wk. 4 da.
2 " 5 "
7 " 2 "
8 " 6 "
9 " 1 "

1 yd. 1 ft. 4 in.
3 " 2 " 11 "
4 " 1 " 7 "
3 " 2 " 2 "
1 " 6 " 6 "
2 " 2 " 10 "

LIII.

Subtract

2 yd. 1 ft. 11 in.
2 " 9 "

11 wk. 6 da.
9 " 5 "

28 gal. 1 qt. 1 pt.
6 " 3 " 1 1/2 pt.

4 hr. 15 min. 40 sec.
1 " 18 " 30 "

2 hr. 10 min. 50 sec.
1 " 18 " 56 "

16 yd. 9 ft. 1 in.
5 " 1 " 11 "

17 lb. 9 oz.
2 " 12 "

LIV.

Visualize.

Multiply 8 hr. 5 min.
8

11 wk. 5 da.
6

40 min. 18 sec.
10

12 hr. 3 min. 10 sec.
8

9 ft. 11 in.
10

3 yd. 1 ft. 2 in.
8

7 yd. 7 in.
4

LV.

Divide

30 gal. 1 qt.
9

8 hr. 15 min.
3

9 min. 10 sec.
10

28 ft. 7 in.
11

4 hr. 10 min.
3

5 lb. 8 oz.
6

3 yd. 2 ft
4

7 yd. 4 ft
3

8 gal. 5 qt.
6

7 bu. 3 pk. 2 qt.
2

3 yd. 1 ft. 11 in.
4

7 hr. 10 min.
6

3 ft. 4 in.
2

7 yd. 2 ft
3

LVI.

Visualize rectangles. Find number of square inches in each when dimensions are:

18 in. by 9 in.
12 in. by 2 in.
9 in. by 8 in.
16 in. by 14 in.
28 in. by 12 in.
32 in. by 6 in.
15 in. by 12 in.
18 in. by 16 in.
20 in. by 14 in.
25 in. by 23 in.
26 in. by 25 in.

LVII.

Find number of square feet:

42 ft. by 15 ft.
19 ft. by 13 ft.
18 ft. by 16 ft.
2 yd. by 38 in.
5 ft. 11 in. by 4 ft.
80 in. by 30 in.
76 in. by 12 in.
1 yd. 11 in. by 30 in.
5 1/2 ft. by 2 1/2 ft.
3 1/2 ft. by 2 ft.
9 ft. by 36 in.
2 yd. by 28 in.

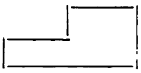
LVIII.

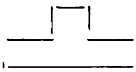
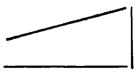
Find number of square yards:

12 yd. by 33 yd.
16 yd. by 15 yd.
18 ft. by 12 ft.
72 ft. by 60 ft.
48 ft. by 30 ft.
16 yd. by 20 ft.
2 yd. by 12 in.
3 yd. by 18 in.
7 ft. by 8 ft.
9 ft. by 7 ft.
8 ft. by 6 ft.
3 yd. by 2 1/2 yd.
12 yd. by 10 1/2 yd.
8 yd. by 5 1/2 yd.
6 yd. by 3 1/2 yd.
10 ft. by 3 1/3 ft.

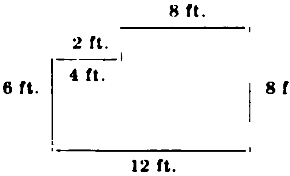
LIX.

Visualize a rectangle and various other figures, as,



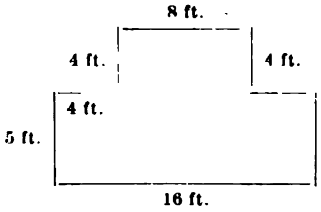
in cards, blocks, etc. and estimate cost of floors, moldings, etc.

Visualize a figure 

and estimate cost of molding for a room of those dimensions at 6 cents a foot.

At $2 a square foot, what will the flooring cost for such a room?

Find cost of molding at 6 cents a foot and of carpet a yard wide at $2.50 a yard. Allow 3 inches molding on each corner for matching.



At $3 a square foot find the cost of tiling a floor of the above shape and dimensions.

Find the cost of carpeting a room 18 feet long and 15 feet wide with carpet 3/4 of a yard wide at $1.75 a yard.

Find the cost of carpeting a room 4 yards 1 foot 6 inches long and 10 feet 4 inches wide with a carpet 3/4 of a yard wide and costing $3 a yard. Which way will the strips run?

Find the cost of carpeting a hall with carpet a yard wide at $1.87 1/2 a yard, the hall being 9 feet wide and 40 feet long.

Find the cost of carpeting a room with carpet 3/4 of a yard wide at $1.62 1/2 a yard, the room being 16 feet long and 15 feet wide.

Find the cost of linoleum for a room 20 ft. long and 18 ft. wide, the linoleum being 2 yards wide and costing $2.12 1/2 a square yard.

18/3 = 6 strips. 6 2/3
6

---

40 yd.

Find the cost of matting a yard wide at $.87 1/2 a yard for a hall 60 feet long and 9 feet wide.

LX.

A triangle is what part of a rectangle?

Fold cards which are rectangles, and form right angled triangles. State dimensions, as, this card is 9 ft. by 6 ft. The area is 54 square feet. The area of the right angled triangle is 1/2 of 54 square feet or 27 square feet.

Call the lower line of the figure the base.

Call the straight line the perpendicular.

The base is 16 feet and the perpendicular 40 feet. Find dimensions.

Find dimensions of the following right angled triangles.

Base	18 yd.;	perpendicular	20 ft.
"	16 yd.	"	30 ft.
"	12 yd.	"	4 yd.
"	18 yd.	"	10 ft.
"	16 yd.	"	8 ft.
"	12 yd.	"	7 ft.
"	25 yd.	"	4 ft.

LXI.

Drill.

3 ft.
12 in.
36 in.
4 qt.
27 cu. ft.
8 cu. ft.
640 A.
12 doz.
360°

60 min.
365 days
24 hours
4 pecks
128 cu. ft.
3 ft.
24 sheets
16 oz.

60 sec.
1728 cu. in.
144 sq. in.
231 cu. in.
16 cu. ft.
320 rods
20 quires
2000 lb.
2150.4 in.

9 sq. ft.
30 1/4 sq. yd.
8 qt.
5 1/2 yd.
9 sq. ft.
160 sq. rd.
12 units
100 lb.

About 7 1/2 gal. = a cubic foot of water.

LXII.

Place on the board for daily drill figures and require statements in sentences, at first glance, as "16 ounces in a pound."

360
12
8
640
27
36
12
3
7 1/2

60
365
7
24
4
128
3
24
100

16
60
1728
2150.4
2000
20
24
320
160

16
5280
9
30 1/4
2
8
5 1/2
2

LXIII.

Change to pints:

5 gal. 3 qt. 1 pt.
2 gal. 2 qt. 1 pt.
34 gal.

7 gal. 2 qt. 1 1/2 pt.
2 gal. 1 qt. 1 pt.
16 gal. 2 qt.

3 gal. 2 qt. 1 pt.
2 gal. 1 qt. 1 pt.
18 gal. 3 qt.

Change to gallons, quarts and pints:

18 pt.
40 qt.
64 gills.

32 pt.
80 pt.
156 qt.

151 pt.
211 pt.
300 pt.

Change to inches:

3 yd. 2 ft. 11 in.
7 yd. 1 ft. 5 in.
8 yd. 2 ft. 6 in.

6 yd. 1 ft. 5 in.
4 yd. 2 ft. 4 in.
6 yd. 2 ft. 8 in.

Change to yards, feet, inches:

176 in.
200 in.
48 ft.
90 ft.

37 ft.
160 ft.
428 in.
600 in.

800 in.
720 in.
400 ft.
320 ft.

LXIV.

Change to square inches:

3 sq. ft. 12 sq. in.
10 " 120 "
8 sq. ft. 115 sq. in.
9 "

Change to square yards, square feet and square inches:

600 sq. in.
420 "
432 sq. in.
864 "
870 sq. in.
500 "

Change to pounds:

3 T 1 cwt.
6 " 2 " 8 lb.
8 T 4 cwt. 20 lb.
7 " 5 " 120 "

Change to tons:

8620 lb.
7480 lb.
9160 lb.
4280 lb.

Change to seconds:

2 hr. 15 min. 20 sec.
4 " 12 " 30 "
16 hr. 4 min. 15 sec.
14 " 8 " 20 "

Change to hours, minutes and seconds:

3000 sec.
2000 sec.
1500 sec.
3600 sec.
420 sec.
740 sec.
80 min. 15 sec.
960 min.
420 min. 40 sec.

LXV.

Change to days:

19 weeks
1 yr. 2 " 3 days
18 weeks 5 days
17 "
1 yr. 20 weeks 6 days.
19 "

Change to hours:

3 days 7 hours
2 weeks 6 days
4/7 of a week
1/5 of a day
9 days 2 hours
5 weeks 3 days
5/7 of a week
3/5 of a day
1 week 3 days
9 " 4 "
6/7 of a week
11/12 of a day

Change to yards:

876 inches
4 ft. 5 inches
900 ft.
380 inches
1720 inches
886 ft.

Change to quarts and pints:

5/12 of a gallon
3 gal. 2 qt. 1 pt.
.9 of a gallon
7/16 of a gallon
.8 of a gallon
.75 of a gallon.

Change to feet:

5/8 of a mile
1/2 of a mile
2/3 of a mile
3/4 of a mile
.6 of a mile
.4 of a mile

LXVI.

In a box 1 1/2 feet long and 1 foot wide how many inch cubes can be placed if the box is 1 inch high? If it is 2 inches high? 3 inches high?

In a box 4 feet long and 3 feet wide and 1 foot high how many foot cubes can be placed? If it is 2 feet high, how many? 3 ft.?

Describe a cubic foot. Draw it. How many cubic inches does it contain?

Describe a cubic yard. Draw it. How many cubic feet does it contain?

Ablock 3 yards long and 1 1/2 yards wide and 1 foot high contains how many cubic yards? How many cubic feet?

How many dimensions has every cubical figure?

How do you find the contents of any cubical figure?

What substances, spaces, etc., are measured by cubic measure?

Take a box 11 inches long, 7 inches wide and 3 inches high. Model it from clay if necessary or have it made water tight from wood.

How much water will it contain? Measure.

How many cubic inches in the box?

How many cubic inches in a gallon?

LXVII.

How many gallons in 693 cu. in.?

About how many gallons in 1728 cu. in.?

How many gallons in 924 cu. in.?

How many cubic inches in 1 1/2 gallons? In 2 gallons? In 3 gal.? In 4 gal.? In 5 gal.?

How many cubic inches in 10 gallons? In 20 gal.? In 30 gal.? In 40 gal.?

How would you find the number of cubic inches in 8764 gallons?

How would you find the number of gallons in 74156 cu. in.?

LXVIII.

Into a box 20 by 30 by 3.581 inches measure a bushel of oats.

A bushel contains 2150.4+cu. in. How many cubic inches in 2 bushel? 3 bu.? 4 bu.?

About how many bushels in 10,000 cu. in.? In 20,000 cu. in.? In 30,000 cu. in.? In 40,000 cu. in.?

About how many cubic feet in a bushel? In 2 bushels? In 3 bushels?

How would you find the number of cubic feet in 218 bushels?

How would you find the number of cubic feet in 187,465 cu. in.?

How would you find the number of bushels in 6 cu. yd.?

How would you find the number of bushels in 3 cu. yd. 20 cu. ft. 100 cu. in.?

How would you find the number of cubic feet in 176 2/3 bushels? In 5/16 bushels?

LXIX.

How long is a cord of wood?

How high is it?

(A cord of wood is 8 ft. long and 4 ft. high, no account being taken of the length of sticks.)

How many cubic feet does it contain?

How many cubic feet in 2 cords? 10 cd.? 8 cd.? 15 cd.? 16 cd.? 21 cd.? 24 cd.? 25 cd.?

How many cords in a pile of wood 20 ft. long, 8 ft. wide and 12 ft. high?

How many cords in a pile of stone 24 ft. long, 16 ft. wide and 4 ft. high?

A pile of four foot wood is 32 ft. long and 12 ft. high. What will it cost to cut at $4 a cord?

3840 cu. ft. contain how many cords?

2560 cu. ft. contains how many cords?

5 1/2 cords contain how many cubic feet?

3 1/2 cords contain how many cubic feet?

8 1/4 cords contain how many cubic feet?

LXX.

How many days from Jan. 5 to May 28? Sept. 3 to Dec. 12? Nov. 1 to Mar. 8? July 4 to Sept. 9? Aug. 15 to Dec. 25? Aug. 24 to Sept. 11? May 21 to Aug. 25? Sept. 1 to Jan. 1? March 9 to April 26? June 10 to August 1? July 4 to Sept. 9? May 12 to Jan. 1? Feb. 29 to Oct. 16? May 1 to June 16? April 25 to July 3? March 11 to June 1? May 18 to Oct. 11? May 21 to Jan. 1? June 3 to July 18? July 5 to Oct. 4?

In finding the time between dates omit either the first or the last date, as, from the 8th to the 28th is 20 days.

Find time from Jan. 1 to June 6.

Jan 1 to Jan. 31	30	days
Feb.	28	"
March	31	"
April	30	"
May	31	"
June	6	"
	156	days

LXXI.

Make due allowance for leap year.

How many days from March 6, 1908 to April 15, 1909? April 5, 1907 to Jan. 14, 1908? Jan. 5, 1909 to April 1, 1910? May 14, 1909 to May 20, 1910? March 16, 1909 to Jan. 12, 1910? May 14, 1909 to June 14, 1910? April 15, 1906 to Feb. 3, 1907? April 10, 1905 to June 1, 1906?

LXXII.

How many hours and minutes from 10 minutes after 5 in the morning to 11 minutes past 6 in the evening?

How many hours and minutes from 4 hours 20 minutes a. m. to 4 hours 20 minutes p. m.?

How many hours and minutes from 9 hours 15 minutes a. m. to 4 hr. p. m.?

How many hours and minutes from 2 hr. 30 min. a. m. to 5 hr. 16 min. p. m.?

How many hours and minutes from 10 hr. 15 min. a. m. to 4 hr. 11 min. p. m.?

How many hours and minutes from 2 hr. 3 min. p. m. to 5 hr. 8 min. a. m.?

How many hours and minutes from 6 hr. 12 min. a. m. to 11 hr. 30 min. a. m.?

How many hours and minutes from 4 hr. 16 min. after 10 a. m. to 12 m.?

How many hours and minutes from 1 hr. 15 min. p. m. to 8 hr. 8 minutes p. m.?

LXXIII.

How many gallons in a tank 4 ft. long, 3 ft. wide and 2 ft. high? (About 7 1/2 gallons to a cubic foot.)

How many gallons will a tank hold which is 4 ft. long, 2 ft. wide and 18 inches high?

About how large a tank will hold 100 gal.?

About what would be the dimensions of a tank that will hold 200 gal.?

About what will be the dimensions of a bin that will hold 100 bushels?

About what will be the dimensions of a bin that will hold 200 bushels of wheat?

About how many gallons will be contained in a barrel containing 6900 cu. in. of space?

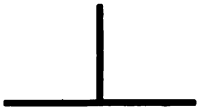
How many cords of stone in a pile 30 ft. long, 8 ft. wide and 4 ft. high?

How many cords of wood in a pile 32 ft. long, 4 ft. wide and 12 ft. high?

LXXIV.

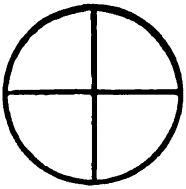
Draw two lines meeting at a point. These lines form an angle.

Observe angles in the room, on the floor, the table, the desk, the pictures.

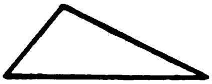


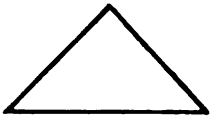
The right angles formed by the intersection of one line drawn perpendicular to another are complementary angles.

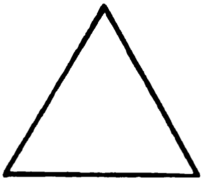
Draw right angles; complementary angles.
An acute angle is less than a right angle.
An obtuse angle is greater than a right angle.



How many right angles in the circle?
How many degrees in a right angle?
Draw acute angles. Obtuse angles. Right angles.
Fold circular papers into as many right angles as possible.





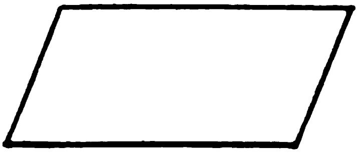


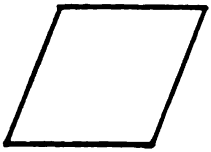
A triangle that has no two sides equal is called a scalene triangle.

Fold papers to form scalene triangles. Draw as many different kinds as possible.

Draw a triangle having two sides equal. This is called an isosceles triangle. The unequal side is called the base.

Draw a triangle having three equal sides. This is called an equilateral triangle.





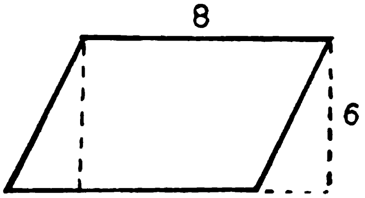
The opposite sides of this figure are parallel and it contains no right angles. Such a figure is called a rhomboid. The second figure is a rhomboid having all its sides equal. Such a figure is called a rhombus.

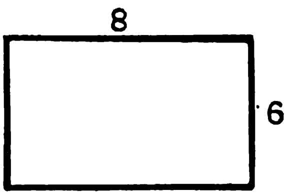
LXXV.

Parallel lines are lines that will never meet, however extended.

Cut from paper a rhomboid base 4 inches, altitude 2 inches. Cut a rectangle base 4 inches, altitude 2 inches. Compare.

Can you discover how you may find the area of the rhomboid?

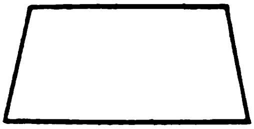


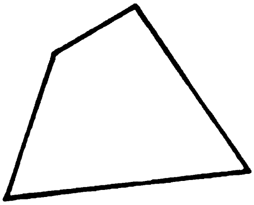


$8 \times 6 = 48$

Cut from paper and compare a square 8 by 8 and a rhombus 8 by 8. Find area of each. How?

A quadrilateral is a four sided figure. When such a figure has only two sides parallel it is called a trapezoid. When none of its sides are parallel it is called a trapezium. Draw many of each. Cut from paper.





LXXVI.

Cut from paper as many different rhomboids as you can having a base of 4 inches and an altitude of 3 1/2 inches.

Cut from dictation right angled triangle, rhomboid, rhombus, isoseles triangle, acute angles, obtuse angles, scalene triangle, trapezoid, trapezium.

Dictate dimensions.

Also draw the above from dictation.

Fold from dictation.

How can you find the number of square inches in a right angled triangle?

In a rhomboid? Rhombus? Rectangle?

LXXVII.

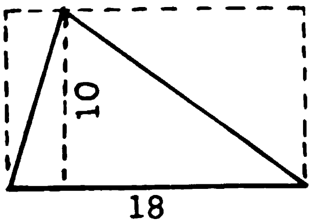
Find areas:

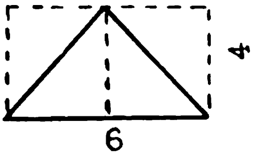
A square whose sides measure 25 ft.

A square whose sides measure 16 ft.

A square whose sides measure 180 ft.

A triangle whose base measures 18 rods, altitude 10 rods.





A rectangle 16 ft. by 5 yd.
Calculate the area of an isosceles triangle.
A rhombus whose base is 48 ft. and whose altitude is 36 ft.

A triangle whose base is 3 yd. and altitude 14 ft.
A rectangle whose base is 20 ft. and whose altitude is 18 ft.
A square whose sides are 18 1/2 ft.
A parallelogram whose dimensions are 8 yd. by 8 ft.

LXXVIII.

With a globe estimate the number of degrees between different places. Review lessons on rotation. The earth turns 360° in one day. How far does it turn in one hour?

Then one hour's difference in time means 15° difference in longitude.

With a map showing standard time in the U. S., estimate differences in time between different cities.

The more easterly of two places has which time, earlier or later? Why? Look at the map. When it is 9 a. m. in New York what time is it in San Francisco?

When it is 12 o'clock noon in Chicago what time is it in New York? In Denver? In San Francisco?

Explain Eastern, Central, Mountain and Western time. Eastern places take the time of the meridian 75°, and set their watches and clocks accordingly. The time line is drawn through important railroad centers as Buffalo, Pittsburg, Wheeling, Atlanta, Ga., Charleston. The people of the adjoining section take the meridian 90° as their standard and set their clocks and watches with the sun as it crosses the line. As the sun does not reach the meridian 90° for an hour after it has crossed the line 75°, the time is one hour earlier. The people here rise an hour later than the people in New York. Those who live in the mountain district take the line 105° and therefore breakfast an hour later than the people in St. Paul and two hours later than those in New York. In the Pacific section the meridian 120° controls the timepieces and when the children of New York are going home to lunch at noon, the children of San Francisco are just eating breakfast.

LXXIX.

A stranger in San Francisco looks at his watch as the noon whistles are blowing and finds it is ten o'clock. From what section do you think he has come?

When it is time to close the school in the afternoon in Charleston, S. C., what time is it in Seattle, Wash.?

When the children who rise at 7:30 in Minneapolis are getting up, what time is it in Spokane? In Washington, D. C.?

A boy in New York City sends a telegram to his cousin in San Francisco at 11 a. m. It takes 30 minutes to deliver the message. At what time does the San Francisco boy receive it?

The cousin in San Francisco sends a return message at 9 a. m. It also takes 30 minutes for delivery. At what time does the New York boy receive it?

What is the boy in San Francisco probably doing when his cousin is eating his dinner at 7 o'clock in New York?

How many hours difference in time in places which differ in longitude 90°? 45°? 60°?

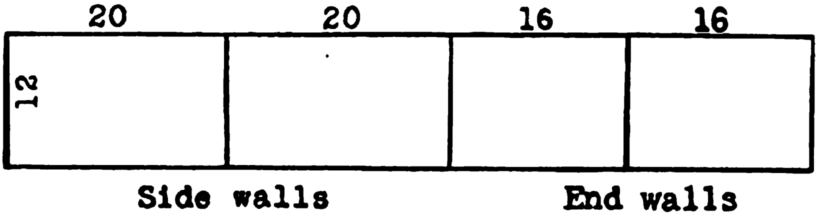
How many degrees of longitude correspond to a difference in time of 3 hours 40 minutes?

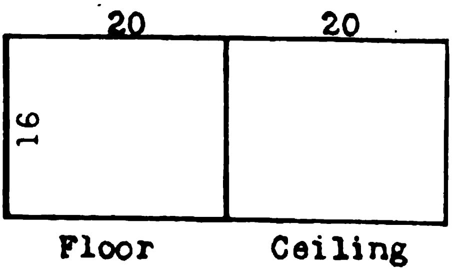
A place 75° East longitude is how many degrees from a place 60° West longitude?

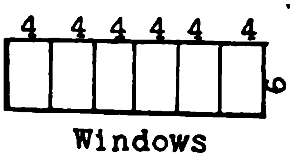
How far apart in degrees are St. Petersburg, 30° East longitude, and Washington 77° West longitude?

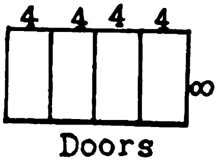
How far apart are Chicago, 87 1/2° West and Washington 77° West?

LXXX.









How many square feet in the walls and ceiling of a room 20 ft. long, 12 ft. high and 16 ft. wide?

How many square feet in 6 windows and 4 doors whose dimensions are 6 ft. by 4 ft. and 8 ft. by 4 ft. respectively?

Allowing for doors and windows what will it cost to paper ceiling and side walls with paper at 60 cents a roll, 16 yd. to the roll, allowing 2 feet on the height of the room for baseboard and border?

What will the molding cost at 6 cents a foot?

What will carpet 1 yard wide cost at $1.25 a yard, the strips running the width of the room and turning under the waste?

What will be the cost of plastering a room 16 ft. long, 12 ft. wide and 10 ft. high at 30 cents a square yard, making no allowance for doors and windows?

Allowing for 3 doors each 8 ft. by 4 ft. and 4 windows, each 6 ft. by 3 1/2 ft. what will it cost to tint the walls and ceiling at 30 cents a square yard?

What will carpet a yard wide cost at $3 a yard? Allowing the strips to run lengthwise how many strips will be required?

What will molding cost at 12 1/2 cents a foot?

LXXXII.

1. A man's average salary is $42.75 a week. How much is it a year?
2. At $.23 a dozen, what is the cost of 11 gross of lead pencils?
3. What is the difference in time between places 87° apart?
4. At 8c a cubic foot, find the cost of a block of stone 7 ft. long, 4 ft. wide 1 1/2 ft. high.
5. 9 men earn $81 in 3 days. At the same rate how much will 18 men earn in 6 days?
6. The tax to be raised in a town is $45,000. The taxable property is valued at $1,500,000. What is the tax on $1000?
7. A lot bought for $980 must be sold for how much to gain 50%?
8. What is the interest on $6860 for 3 years at 5%?
9. Two horses were sold for $100 apiece. On one was a gain of 25%. On the other a loss of 25%. What was the gain or loss on both?
10. What is the cost of insuring a house worth $80,000 for 3/4 of its value at 1 2/3%?
11. From a bin containing 125.6 bu. of oats 62.75 bu. were sold. How many bushels remained?
12. Square 250; 230; 210; 180; 160; 150.
13. Cube 30; 40; 50.
14. Raise 2 to the 5th power. 3 to the 5th. 5 to the 4th. 6 to the 4th. 7 to the 4th.
15. How many cubic inches in a barrel of vinegar containing 30 1/3 gal.?
16. Three bushels of apples contain how many cubic inches?
17. In 704 cu. ft. of wood, how many cords?
18. 12 men can do a piece of work in 5 1/2 days. In how many days can 48 men do the same work?
19. How many ounces in a barrel of sugar containing 50 lb. 12 oz.?
20. How many gills in 16 qt. 1 pt. 3 gi. of oil?
21. How many yards of carpet in a piece containing 76 ft. 4 in.?
22. How many inches of ribbon in a piece containing 9 yd. 2 ft. 11 in.?
23. How many yards in a piece of wire containing 3675 inches?
24. How many square inches in 9 1/2 sq. ft. of tin?
25. Each of 9 pieces of cloth contains 7 yd. 2 ft. 4 in. How many yards in all?
26. Each of 11 pieces of silk contains 12.86 yd. How many yards in all?
27. How many cubic inches in 3 1/2 cu. ft.?

28. For how much must goods bought at $.75 a yard be sold in order to gain 33 1/3%.
29. 80c is 150% of the cost price of a piece of music. How much did it cost?
30. A board 18 inches long, 9 inches wide and 1/2 inch thick contains how many board feet?
31. Find the contents of a plank 16 ft. long, 11 ft. wide and 3 inches thick?
32. At 30 cents a board foot a board 2 inches thick and 12 feet long cost $3.60. How wide was it?
33. How deep is a bin which contains 144 bu. if it is 16 ft. long and 8 ft. wide?
34. Goods bought at $1.80 a yard were sold at a discount of 33 1/3%. For how much were 10 yd. sold?

BULLETIN NO. 49

STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

LANGUAGE OUTLINE

Prepared by Miss Sara M. Nicholson, County Normal Supervisor.

THIRD GRADE

SEPTEMBER

Aim to develop the oral composition through conversations, descriptions and reproductions of stories told by the teacher.

Subjects for conversation.—Evaporation. Hills. Bark. Leaves. Autumn flowers. When the days grow shorter. Where the leaves go. What the stars are.

Evaporation.

How the walks are damp in the morning. What happens when you place a pitcher of ice-water in a warm room? Where do the drops on the pitcher come from?

Illustrate condensation by placing a glass of ice-water on the table and watching the result. Teach the use of the word.

Talk about dew and frost. Tell how they are caused by condensation. Teach the use of the words moisture, vapor, evaporate. Teach about rain, snow. Use illustrations. Let the children tell of instances of evaporation they have noticed. Why are the trees white on a frosty morning? What causes the dew on the grass? Why do we not see the dew at noon?

Hills.

Describe a hill that you have seen. What are rows of hills called? When hills are very, very high what are they called? The top of a hill is called what? The foot of a hill? Why is the top of a hill a good place to live?

Let those who have seen mountains describe them. Use the words valley, plateau, range, cliff, abrupt, slope, rough, steep, base, peak, chain, system.

Bark.

Show specimens of the bark of all the varieties of trees in the neighborhood. Describe the different kinds. How do they differ from each other? How do you know that this is birch bark? How can you tell that this is cedar bark? What is the difference in appearance between oak bark and maple bark? Of what use is the bark to the tree? What use is made of it when the tree is cut down?

Leaves.

Collect specimens of all the leaves that grow in the neighborhood. Use the words long, short, broad, vein, net-veined, parallel-veined, blade, stem, petiole, stipule, margin, wavy margin, dentate margin, crenate margin, entire margin, serrate margin, lobed leaf, compound leaf, leaflets. Why do the leaves change color in the autumn?

Where the leaves go.

Describe the changing of the leaves. To what colors do they turn? Describe the woods in autumn. What does the autumn wind do to the leaves? Where does it take them? What comes to cover them? After a time what happens?

Autumn flowers.

Collect specimens of September flowers. How do they differ in size, color and fragrance from the spring flowers? How many autumn flowers can you name? What are the colors we see most in autumn? Use the words stamen, petal, cluster, calyx, corolla, pistil, perianth, sepal. Study the form, color and parts of each of the specimens to describe.

When the days grow shorter.

Talk about the shape of the earth, the position of the sun, the revolution of the earth on its axis, the earth traveling about the sun. Show with globes. Let the children dramatize it. Show that the days are shorter in our neighborhood when the northern hemisphere is turned away from the sun.

What the stars are.

Describe the earth, shape, size, land and water formations. Describe the stars as similar formations. Use the words planets, solar system, sphere, asteroids. Describe distances apart. Encourage the children to find out and talk of them.

See to it that every child takes part in the conversation. Do not repeat conversations. Aim to give the children new ideas on familiar subjects, the use of new words. Arouse their interest in the subject but do not try to teach the subject in detail. We wish merely to give them a new viewpoint.

Descriptions.

Describe a ball, a cube, a cylinder, a ring, a box, a stick of candy, an orange.

In these exercises aim to have the pupils acquire a command of new words—words that individualize the objects described. For example, the class will look at a ball—they think of its shape. What word will describe its shape? "Spherical." Is it hard or soft or brittle? Is it light or heavy?

Describe a cube. How many faces has it? How does it differ from a square? A sphere? Look about the room and see how many objects are cubical in shape; spherical in shape.

Describe a cylinder. Show the class a set of cylinders of different sizes. Tell them the name of one cylinder. Let them feel it. Then ask one child to skip to the table and find another cylinder, and so on until the pupils become familiar with the name cylinder. Have them look about the room and point to or select objects that are cylindrical in shape.

Ask some pupil to describe a piece of chalk telling its shape. Explain the meaning of brittle. Have pupils use the word brittle in their descriptions. Limestone. Tell briefly what chalk is made from. Use of chalk.

Have a set of circles of different sizes. Tell the class the name of one and let them name each of the others. Call for the description of a ring. Develop the word circular.

Describe a box. What is its shape? How many faces has it?

Describe a stick of candy,—shape, color, where you saw it, brittle, sweet, hard, flavor.

Describe an orange,—spherical, skin, pulp, porous, juicy, aromatic.

Reproductions.

Most of the reproduction material consists of stories. Only stories that are masterpieces and appropriate to the grade ought to be used. Every teacher should be a story-teller, and carefully prepare and rehearse the stories beforehand and be able to tell them clearly and dramatically, and bring out the best qualities of their stories.

Stories to be told.

Pippa, from the Child Stories from the Masters. *The Golden Bird*.—Children's Hour, Vol. I, Houghton Mifflin Company.

Daily drills.

Use in sentences each day the following list of verbs, adjectives and adverbs:—see, sees, saw, has seen, have seen, had seen; run, runs, ran, has run, have run, had run; eat, eats, ate, has eaten, have eaten, had eaten; throw, throws, threw, has thrown, have thrown, had thrown; quiet, quietly; slow, slowly; noisy, noisily.

Written work.

One written exercise a week to teach the use of punctuation marks, capital letters.

Poem study.

Articulation, enunciation and pronunciation should be carefully drilled upon, corrected and kept to a high standard. Poems should be rendered musically and sympathetically, and should never be permitted to drag or become monotonous.

OCTOBER

Aim.—To teach sentence construction, to use in sentences words which were used in September, to continue work in descriptions, conversations, stories.

Conversations.

Autumn.

Talk about the autumn season. What changes have been observed in the length of days and nights? In the leaves? In the birds? Mornings and evenings? What fruits are ripe now? What are vegetables? Where are the birds going? What are the farmers doing? What are the mothers doing at home? What do you observe every day as to where the sun rises and sets? When it rises and sets? Do you know why the days are shorter? What do you remember about it from previous conversations?

Birds.

Name all the birds you have observed during the summer. Describe their appearance, song, nests. Where are the birds going now? When will they come again?

Rain.

From where does the rain come? What causes it? What are the clouds? How are they formed? What causes the rain to fall? Of what use is the rain? Use the words evaporation, condensation, vapor, visible, invisible, moisture.

Squirrels.

Describe the squirrel. Have you ever seen a squirrel? What does the squirrel gather for food? How? Where does it live? How does it climb trees? What are the enemies of the squirrel? What does the squirrel destroy? For what are they good? Where do they go in winter? Use the words enemies, hibernate, fur-bearing.

Description.

Describe a bunch of grapes, an apple, a flower, a cat-tail, a book, a dew-drop, a star. (From last month's conversation work.) Example.

This book is twelve inches long, eight inches wide and an inch and a half thick. It is made up of many thin sheets of paper between pasteboard covers. These thin sheets of paper are called leaves. Each side of a leaf is called a page. The pictures in a book are called illustrations. The first page is the fly-leaf and the next is the title-page. The title of the book tells what it is about. It is printed on the back also and on the cover. The edges of the leaves are sometimes protected by gold leaf. The covers protect the leaves which are tightly sewed and glued together at the back.

A bunch of grapes.

The grapes form a thick cluster on the stem. These grapes are pale green and transparent. Each grape is spherical in shape and covered with skin. Inside of the skin there are pulp and seeds. The bunch of grapes is conical in shape.

A bunch of autumn leaves.

These leaves are from a maple tree. Each leaf is large and has five lobes. The edges of the leaf are like the edge of a saw or serrate. A rib runs through the middle and one through each lobe. The veins extend from these ribs in a network in all directions.

In every description develop information and a new set of words that is specially suited to the object to be described.

Stories.

Continue the stories.

1. *The Golden Bird.* Children's Hour, Vol. I.
2. *The Darning Needle.* Children's Hour, Vol. I.
3. Fables,—*Belling the Cat. The Fox and the Grapes. The Lion and the Mouse. The Sun and the Wind.* Children's Hour, Vol. I.

Poem study.

There is no other way in the world by which a full, rich vocabulary can be acquired as satisfactorily as in the memorizing of poems.

Drills.

Give daily drill in the use of break, breaks, broke, has broken, have broken, had broken; climb, climbs, climbed, has climbed, have climbed, had climbed; take, takes, took, has taken, have taken, had taken. Example:—Miss G says, "John, take the book home." I shall take the book home. Emma takes the book home. I took the book home. I have taken the book home. If I had taken it yesterday, I should have lost it. He has taken the book to mother.

Review verbs from September outline. Drill daily on the use of sweet, sweetly; sad, sadly; heavy, heavily.

Written composition.

Have a written exercise once a week. Give dictation exercises, drilling on the use of contractions. Continue drill in teaching marks of punctuation and capital letters.

NOVEMBER

Teach the pupils to present an oral composition in well constructed sentences and to use the words familiarized in previous months.

Stories.

The Landing of the Pilgrims. Hop o' my Thumb. Children's Hour, Vol. I. *The Child of the Forest,* Children's Hour, Vol. II.

After the stories have been told and retold assign parts in *The Landing of the Pilgrims* and dramatize it. Let them make up their own conversations. Encourage initiative and spontaneity.

Teach orally a poem selected from the new Course of Study. Suggestion.

Use the pictures from the Ladies' Home Journal entitled "Flossie Fisher's Funnies" for work in original story telling. Let the pupils tell the story suggested by the pictures.

Describe a plate, a drinking glass, a spoon. Example.—A spoon is an article used at the diningroom table. It is made of silver and has a hollow bowl at one end and a slender, curved handle at the other. Some spoons are made of tin and other metals. Some are large for kitchen use. There are different kinds of spoons for table use, as teaspoons, dessert spoons, gravy spoons.

In describing a plate develop the words hollow, curved, rim, concave, convex, circular, decorated, luster.

Conversations.

Drill on the use of shall and will. Example.—I shall close the window. Jane will bring her lunch. The teacher will ask questions to elicit the correct answers.

Drill on the use of adjectives and adverbs. Examples,—busy, busily; slow, slowly. How did Willie walk as he came up the hall? He walked slowly. Is Willie swift or slow in his movements? He is slow. Nellie is working her problems. Is Nellie idle? No. Nellie is busy. How is Nellie working? She is working busily.

Conversation about a picture. Example.—A picture of a school in Germany. Tell the children the story of the picture and who painted it. Use the words original, landscape, scene, peasant.

Question pupils about the room, the walls, the dress of the teacher, of the children, the seats and furniture. What are they doing? Do they seem interested in this work? Do they seem happy?

Conversation about a poem. Example.—*The Children's Hour*. By questions find out what the poem means to the children. Tell them about Longfellow and how he came to write it. Ask them to describe the pictures that they see when the poem is recited.

Conversation about a clock. Face, hands, figures, works, case. Point out each and tell its use. Explain how to tell time. How is the clock kept going? What kinds of clocks have you seen? What is the shape of the clock? What material is used in it?

DECEMBER

Aim. Keep in mind that you are teaching the child how to talk and that this will be accomplished by giving him a vocabulary, developing his powers of observation and drilling him in correct forms of expression.

Conversations.

Pictures. Compare different pictures of the Christ Child and the Madonna. Select the one you like best. Tell why you like it. Pictures of Christmas in other lands. Talk about the meaning of Christmas and Christmas customs. Pictures of Santa Claus. Who was St. Nicholas?

Conversation about ice. How it forms. When? Why? Is ice heavier or lighter than water? For what is ice used?

Descriptions.

Describe pictures. Use pictures of child life as *Handel Playing the Harpsichord*. The Hiawatha pictures. Describe some winter sports as skiing. Describe a pair of skis. How are they controlled? What are the best places in which to ski?

Stories.

Christmas stories. *The Little Match Girl.* Use Sarah Cone Bryant's How to Tell Stories. Dramatize one or two stories.

Drill.

Use in sentences, games and conversations:—freeze, froze, frozen; swim, swam; break, broke, broken; well, good, better, best; tall, taller, tallest. I, me; he, him; she, her; it.

A paper wad. Of what is it made? From where did the paper come? Of what is paper made? How is it made?

A pane of glass.

What material is used in making glass? Give the children a description of how glass is made. Show illustrations. Require them to tell about it.

Where the coal comes from.

Use illustrations to show mines and mining. Talk of coal, how it is mined, loaded and shipped. What other material comes out of the ground?

Descriptions.

A snow ball. Use the words spherical, compact, particle, glistening.
A lead pencil. Use the words cylindrical, slender, graphite, tube.
A rubber ball. Use the words hollow, spherical, light, elastic.
A snow shoe. Use the words oval, flat, sections, elastic, curved.

JANUARY

Poem study.

Select poems from the Course of Study. Teach quotations. Stories to be told and dramatized.

Red Riding Hood, Edna Lyman,—Story Telling.
Mirror of Matzuyama,
The Princess Moonbeam,
The Boastful Bamboo.

Conversations.

Making a snowman. A cup of coffee.

A cup of coffee. Discuss where the coffee grows. Use pictures of coffee plantation, plants, pods. How the coffee is grown and prepared for market, shipped and sold.

A church steeple. Use the words slender, spire, cone, tall, light, elevated, base, circular.

Give daily drill in the correct use of verbs, adjectives, adverbs and pronouns. Give the drills as games, conversations and drill exercises.

FEBRUARY

Poem study.

Select poems from the Course of Study.

Stories.

Dramatize *The Lark and Her Young Ones* and other stories selected from the readers. Tell *The Ugly Duckling,* Children's Hour, Vol. I, Selections from Aesop's Fables, Stories of Washington, Longfellow, Lincoln.

Descriptions.

Describe the American flag. Of what is it made? What are the colors? How are they arranged? How many stars? How many stripes? Tell the story of Betsey Ross. What does the flag mean to us? What protection does it give us?

Describe a teapot. Use the words spout, handle, porcelain, china, decorated, receptacle, glazed, spheroid.

Describe a crayon-box. Use the words hollow, cubical, oblong, groove, rough, light, faces, base, dimensions.

Describe an oyster. Use the words slippery, smooth, slimy, soft, moist, lustre, triangular, oval, flavor.

Conversation.

Oysters. Where are they found? What are they? When are they good to eat. Show illustrations.

Table manners. How to sit at the table. How to handle the knife and fork. How to eat. Breaking the bread. Eating quietly. "Thank you" and "If you please." Leaving the table. Dramatize.

Use subjects that come up in reading.

Drill work.

Use in sentences the following words:—write, writes, wrote, written, has written, had written, have written; break, breaks, broke, broken, has broken, have broken, had broken; noisy, noisily; soft, softly; sweet, sweetly.

Concert work.

It is I.
It is he.
It is she.

I gave it to her.
It came from him.
I saw him.
I knew her.

It is they.
He and I wrote it.
She and I wrote rapidly.

It was they.
I saw them.
Who saw it?
It was who?

MARCH

Poem study.

Select poems from the Course of Study.

Stories.

Dramatize *Puss in Boots* and *Jack and His Comrades,* Children's Hour, Part I. Stories from the First Americans and Fifty Famous Stories.

Conversations.

Spring. Why are the days growing longer? When do we see the sun rise? Where does it set? What will cause the snow to melt? Where will it go? What will bring out the leaves and birds and flowers? What birds shall we look for first? What flowers? What buds shall we find first? How many days are there in the year? How many months? What are the spring months? What are the winter months? Fall? Summer? How many days in each month? What is a calendar?

Money. Name the different coins. Of what are they made? Describe a quarter, a penny, a dime, a nickel. What are bills? For what can they be exchanged? Use the words circular, flat, disc, notched, shield, laurel, arrows, engraved, inscription.

Describe a picture. Describe the pictures that are vizualized in reciting Hiawatha's Childhood.

Describe a window-shade. Use the words roller, cylindrical, spring, opaque, linen, raise, lower, roll, brackets.

Describe a table, a stool, a cup.

Give verb drills daily. Also daily drill in the use of the personal pronoun.

APRIL

Poem study.

Select poems from the Course of Study.

Stories.

Little Ida's Flowers, Andersen's Fairy Tales.
The Fox and the Stork, Children's Hour, Vol. I.
Selections from readers to dramatize.
Why There is a Man in the Moon, Children's Hour, Vol. I.
Stories of American History.

Written work.

Dictation exercises. Ginn's Practice in the Use of Punctuation Marks and Capital Letters once a week.

Descriptions.

Describe pussy willows, bark of different trees, wood of different trees, pebbles, a fence, a post, a telegraph pole, a bowlder, a valley.

Conversations.

The soil of the locality. The birds of the neighborhood, their coming, nests, etc. Rivers. Lakes. Salt, where found, use, describe.

Drill.

Go, goes, went, has gone, have gone, had gone; see, sees, saw, has seen, have seen, had seen; do, does, did, has done, have done, had done. Harsh, harshly; sweet, sweetly; well, better.

May brought it to him and me.

John saved it for her and me.

MAY

Poem study.

Select poems from the Course of Study.

Stories.

Stories from Child Stories of the Masters; Siegfried; *Iktomi and the Turtle*, from Old Indian Legends, Ginn & Company. *The Lad Who Went to the North Wind*, Children's Hour, Vol. I.

Describe a flower, a chair, a tin can, sounds of a bird's song, music, shuffling of feet, a whistle. Describe the smell of violets, pepper, orange, vinegar. Describe the taste of chocolate, lemon pie, pineapple. Describe the touch of velvet, silk, linen, carpet, wool, wood, metal. Make lists of words that describe taste, smell, touch, sound and apply them to the things they best describe.

Conversations.

A rainy morning. Use the words vapor, moisture, damp, wet, gloomy, drooping, splashing, pattering, mist, gray, raw, condensation, evaporation, pool, puddle, dripping, fog.

A sunshiny morning. Use the words bright, balmy, fragrant, twitter, chatter, rippling, glint, glow, sparkle, merry, chirp, dart, dance, glimmer, glitter.

Grass. Use the words soft, emerald, velvety.

A rainbow. Tell of rainbows you have seen. Describe their colors. When did they appear? Tell the story of *The Pot of Gold.* What does a rainbow indicate?

Sugar. How is it made? Where does the sugar-cane grow?

Daily drill in use of verbs, adjectives, adverbs and pronouns.

FOURTH GRADE

SEPTEMBER

Aim. Train pupils to arrange their subject matter in the form of oral composition, to acquire the habit of correct, simple sentence construction and a logical arrangement of ideas. Get them to talk, rather than to write, their compositions, descriptions and stories.

Poem study.

Select poems for memorizing from the Course of Study. Teach them orally with expression, life and dramatic effect. Give particular attention to the pitch and modulation of the voice. Insist on distinct articulation, perfect pronunciation, full use of the vocal organs.

Stories. Told by the teacher.

Iktomi and the Ducks, Old Indian Legends, Ginn & Company. *Jack the Giant Killer,* Children's Hour. Vol. I, Houghton, Mifflin Co. *Cinderella,* Children's Hour, Vol. I. *The Frog-King. The Lad Who Went to the North Wind.* Dramatize two of these stories.

Descriptions.

A flower. Use the words stamen, pistil, calyx, twig, pollen, petal, corolla, filament, anther, perianth, ovary, style, carpel, lobe.

A seed. Use the words seed-coat, nucleus, body, kernel, embryo, albumen. (Analyze beans, peas, corn. Take them apart and name the different parts.)

A tree. Use the words trunk, head, bark, pith, wood, cone-shaped, round, deciduous, evergreen, foliage; primary branches, secondary branches.

An apple. (Cut the apple and name the different parts.) Use the words pod, ovules, carpels, pulp, skin.

A leaf. Use the words blade, petiole, stipules, veins, sheath, legules, net-veined, parallel-veined, margin, entire, serrate, crenate, dentate, lobed, base, apex, tapering, obtuse, acute. Have many leaves in the class. Examine them carefully and use right terms in describing each leaf.

Conversations.

A chrysanthemum. Use the words color, size, fragrance. Study composition of the flower, composition of the leaf. Where do they grow? When do they blossom? The seed. Use the words brilliant, striking, beautiful, warm.

Autumn flowers, autumn leaves, fruit.

A garden. Describe. Who planted it? When? Where is it? How was it arranged? Cared for? What was raised in it? Use the words variety, weeds, fertile, barren, loamy, sandy, furrow, row, hedge, rocky, irrigate, clayey, transplant, rich, destroy, insects.

Give daily oral drill in the use of break, breaks, broke, has broken, have broken, had broken.

We break plates easily. Ella breaks the dishes easily. Annie broke a cup this morning. Esther broke mine yesterday. Gerald has broken the window pane. If his brother had broken it he would have been punished. I shall break the dish. We shall break the dishes.

Put the list of verbs on the board. Let pupils rise in turn, repeat the form of the verb and use each form in a sentence. Use the words eat, lie, run, begin, set, sing; quiet, quietly; soft, softly; sure, surely.

OCTOBER

Poem study.

Select poems from the Course of study.

Stories. Told by the teacher.

The Princess Moonbeam, Edna Lyman's Story Telling. *Jack and His Master,* Children's Hour, Part I. *The Boy and the Mud Pony,* Children's Hour, Part I. *Iktomi's Blanket,* Old Indian Legends, Ginn & Company. *A Fish and a Butterfly.* Child Stories of the Masters, Houghton Mifflin Company.

Dramatize at least two stories.

Drill work.

Lie, sit, go, see, well, good; I shall, he will, we shall, they will; angry, angrily; loud, loudly; slow, slowly.

Conversation.

The sun. Tell the children what the sun is. Talk of its distance from the earth. Review previous talks about the revolution of the earth and the seasons. Of what use is the sun to us? What do we get from the sun? What do the plants and animals receive? What causes the difference in the length of day and night between now and two months ago? What changes do we observe that show that the season is changing? Frost. What is frost? What causes it? What is vapor? What changes vapor to water? Water to vapor? What causes the frost to melt?

Winds. What causes the wind? What do winds do for us? What do the winds bring from the different directions? What happens to air when it is heated? When it is chilled? Why is the air always in motion?

Corn. Where does corn grow? Have you ever seen corn growing? Describe a cornfield. When is the corn planted? How is it cared for? In what kind of soil does it grow best? In what climate does it thrive? What are the parts of the seed? Describe the leaf. Describe the ear of corn.

Oral composition.

Corn. Outline:—Corn seed. Describe. When planted? How? How cared for? How and when harvested? Use,—for cattle, food and fodder.

Describe a volcano, a watermelon, a candle, a bird's nest, icebergs.

Iceberg. Reproduce orally a simple, graphic description of an iceberg. Show pictures of them. Select words that will best serve descriptive purposes.

Volcano.

Show pictures. Read and give description of volcanoes and of volcanic eruptions. Show specimens of lava, tuff, ashes, cinder, melted glass. Let the children reproduce descriptions.

A candle.

What is its shape? Size? Color? Fixture? Material? Use the words soft, pliable, elastic, greasy, wick, flame, cylindrical, circular.

A bird's nest.

Use the words texture, receptacle, oval, conical, inverted, hollow, half-sphere.

NOVEMBER

Poem study.

Selections from the Course of Study.

Stories.

Stories of Indian Life. Stories from American History. Nature Stories. Stories from the Greek Myths. Guerber and Children's Hour. Dramatize a few stories such as *Daffydowndilly.*

Drill.

Blow, blows, blew, has blown, have blown, had blown; eat, eats, ate, has eaten, have eaten, had eaten; see, sees, saw, has seen, have seen, had seen.

Use the words strange, strangely; kind, kindly; curious, curiously; mild, mildly; easy, easily.

Conversation.

The Indians. Where they lived, Appearance. Way of living. Wigwams. Work. Tribes. Customs. Chiefs. Squaws. Papooses.

Let different children take different topics and discuss them. Let the class question the speakers for information.

How they helped the Pilgrims. John Smith and Pocahontas. Use the words canoes, wigwam, arrowhead, blanket, moccasin, squaw, chief, papoose, bow, quiver, tribe.

Thanksgiving. The Pilgrims. Who were they? Why did they come to America? The voyage. The sufferings of the Pilgrims' life in America. Dress. The first Thanksgiving. [illegible]. Use the words custom, [illegible], [illegible].

Describe a picture. [illegible] are armed. [illegible]

Describe a [illegible] new descriptive terms [illegible].

A [illegible].

A [illegible] is a [illegible] the ground [illegible] below [illegible] side is a space [illegible]. The words [illegible].

A muskrat.

A muskrat is a [illegible] marshy places [illegible] and [illegible].

[illegible]

* * *

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

JANUARY

Poem study.

Select poems from the Course of Study.

Stories.

Stories from "When Michigan was New." Greek myths. Stories from the Masters.

Dramatize good stories from readers.

Drill.

Freeze, freezes, froze, has frozen, have frozen, had frozen; blow, blows, blew, has blown, have blown, had blown.

Review old verbs. Use the words fierce, fiercely; soft, softly; bitter, bitterly. Drill on "He doesn't," "They don't" in sentences.

Conversations.

Coal. Describe the warmth of the world centuries ago. Swamps of warm water. Plants that grew in the swamp. Disappearance of swamps. The dirt became rock.

N. B.—Give one period to information getting and another to conversation on the subject. Let one lead. He will prepare thoroughly and the others may ask questions and supply information. Use the words swamp-land, carbon, enormous, jungle, ferns, pulp, fuel, hard and soft coal.

How a cement walk is made. How is the cement mixed? How is it put down?

Chocolate. Discuss cocoa bean from Mexico and South America. Who first used it? Tell about the cocoa tree. Height (20 or 30 ft). Where it grows. Shape of nuts. (Almond.) How they lie in the pods. Sent in burlap bags to market. They are sent to the chocolate mills of Milton, Massachusetts. Baker & Pierce are the owners of the mills. How the beans are cleaned from dust. Where the process is carried on. Tell how the cocoa is ground and made into chocolate. Dropped from winnowing machines into hoppers. The machines are capacious and grind the cocoa into a fine paste. How the cakes are made. They are put into oblong molds. These are placed in automatic molders. Machines are operated by steam. Chocolate is sweetened by fine sugar and flavored with vanilla beans.

How chewing gum is made. Have some one begin this talk by telling about the zapote tree of Mexico and Central America. Tell of the resemblance of the fruit to a russet apple. The taste is similar to ice cream. Mr. Adams of Brooklyn discovered that by boiling the sap of this tree it would become like rubber, and rubber gum was manufactured. Tutti frutti gum was made of this sap. The sap is called chicle. It is sent to our country very dirty. It is cleaned, melted and sent to a gum factory. It is boiled, flavored with oil of wintergreen and sweetened with sugar. It is stirred with a revolving paddle. It is said that only twenty-five people in the world can boil gum right. When it is cool it is mixed like bread, made into loaves, rolled through a machine, wrapped up, sent to market. Cleveland and Chicago are the two greatest markets.

FEBRUARY

Poem study.

Select poems from the Course of Study.

Stories.

Dramatize two or three. Select stories from American History, Fifty Famous Stories, Greek Myths, Parsifal. *Iya, the Camp Eater,* Old Indian Legends. *The Timid Hare and the Cruel Lynx.*

Drill.

Select verbs, adjectives and adverbs from other work. Drill daily on the irregular verbs. Use the six forms in sentences, as,—eat, eats, ate, has eaten, have eaten, had eaten; begin, begins, began, has begun, have begun, had begun; drink, drinks, drank, has drunk, have drunk, had drunk.

Conversations.

Peanuts. Grown in Virginia. On vines. Peanut factories, (oil, butter). How they are cleaned. (1.) In a cylinder. (2.) In a sluiceway. How they are sorted. Shells used for horse bedding. Oil extracted by druggists.

Lincoln, Washington, Grant, Longfellow. Commit quotations from Longfellow.

Care of the teeth.

Descriptions.

A fur cap. A tooth. The skin. A picture. A piece of statuary.

A tooth. Use the words crown, root, gum, enamel, blood-vessels, nerves, cement, pulp, cavity, incisors, canines, molars, dentine.

A cap. Kind of fur, lining, rim, band, interlining.

The skin. Use the words dermis, epidermis, glands, follicles, cuticle.

MARCH

Poem study.

Select poems from the Course of Study.

Stories.

Iktomi and the Fawn, Old Indian Legends. *The Monk and the Bird.* Story of Daniel Boone. Story of Pandora. Story of Apollo. Story of Napoleon.

Dramatize a story from the readers.

Daily drill on verbs, pronouns, adjectives, adverbs.

Weekly written lesson. Reproduce a paragraph. Write a punctuation exercise from dictation. Write a poem from memory. Write a letter.

Conversations.

The weather. Care of the finger nails. Courtesy. Table manners. How sugar is made. Cotton.

Describe the sounds of wind in the chimney, sawing wood, unloading coal; the taste of pickles, pie, cheese, olive-oil; the smell of cabbage-cooking, beefsteak; the touch of flour, mud, marble, fur, linen.

Try to describe each with one or two words, as,—The saw makes a harsh, grating sound in the wood. Pickles taste sharp, acid and sour.

Beefsteak has an appetizing, savory smell when it is cooking. Mud feels soft and slimy.

Describe a dictionary, an ink-well, a dining table laid for dinner.

APRIL

Poem study.

Select poems from the Course of Study.

Stories.

Myths from Classic Myths and English Literature (Ginn & Company). Stories from Sarah Cone Bryant's How to Tell Stories. Stories from When Michigan Was New. Child Stories of the Masters.

Conversation.

Brook trout fishing. The cocoanut palm. Big trees in California. The ostrich.

The ostrich. Native of Africa; lives to be over sixty years old; lives on seeds, grass, leaves, beetles, snakes, lizards, sand, grit, bones; eggs —from sixteen to twenty-five in a nest; egg shell—very thick and hard, used for drinking vessel. Ostrich farming. About ninety feathers are taken from each male bird. Timid, shy but very strong and enduring. There is an ostrich farm in California owned by Edwin Cawston. Every year he sells $3,000 worth of infant ostriches at $20 each, and receives $10,000 a year admission to the grounds.

Describe pussy-willows, a bud.

Describe the different sounds of the wind, as on a stormy night; in November; in the chimney; at night. Use the words howling, sighing, whistling.

Describe the sound of a bell, of wagon wheels, of a clock.

Describe the smell of flowers, apple-blossoms, peach-blossoms, orange, mustard, vinegar.

Describe the touch of soapstone, a plate, silk, rubber, as—Rubber is hard and elastic to the touch. An orange has an aromatic, fragrant smell.

Daily Drill.

Go, goes, went, have gone, has gone, had gone; does, do; shall, will. Adjectives and adverbs. Four written lessons.

MAY

Poem study.

Select poems from Course of Study.

Stories.

From Sarah Cone Bryant. Dramatize stories from the reader.

Drill.

Verbs, pronouns, adjectives and adverbs. Memorize choice selections. Write them from memory.

Conversations.

Fishing. Birds. Wool. Memorial Day. Plant seeds in a box and watch their development and growth. Discuss.

Example.

Fishing. Discuss bait, tackle, kinds of fish, habits of the fish, the best places, the best times to fish. Describe the various fish to be caught.

Wool. The sheep ranches. Where? How the wool is obtained. How it is packed, transported, cleaned, made into yarn, thread, etc., dyed, woven. Use pictures, descriptions, etc.

Descriptions.

Rain at night. A thunder shower. A soft, summer rain. A storm.

Water—liquid, mobile, transparent, clear, elastic, lustrous, polished surface, colorless.

Oil—transparent, slightly colored, clear, smooth, greasy, elastic, liquid.

Iron—heavy, dark, compact, not elastic, solid, resistant.

Describe a dollar.

Tell how a box is made; a stool.

FIFTH GRADE

SEPTEMBER

Aim. Increase the vocabulary. Get good, clear, correct expression. Have the children acquire a ready use of words and the habit of associating objects and appropriate terms.

Stories.

From Guerber's *Stories of the Romans*. Roman Myths. The Children's Hour, Book II. Dramatize two stories.

Drill.

Use orally in sentences the words almost, most, bring, take, fetch; he and I; she and I; him and me; her and me; is, are.

Drill on lists of irregular verbs used in sentences, as, go, went, gone, has gone, have gone, had gone.

Written work.

Write a letter. Write an exercise in use of abbreviations. Write a dictation exercise in use of punctuation marks. Write a poem from memory.

Conversations.

Subjects:—Wheat, corn, a burning house, a hose, a nutting party, a flower.

Wheat:—Where grown, when planted, how planted. Seed, parts of the seed, roots, shoot, stalk, leaves, flower. Care of the wheat. Harvesting. The making of flour. Shipping.

Corn:—Where grown. A corn field. How cared for. Harvesting. Shipping. Use. Use in sentences the words maize, husk, hominy, cornmeal, syrup, pop corn, stalk, tassel.

Impersonate a ball of pop corn. When I was planted. How I grew. Who cared for me. How I was nourished. When I was taken from the fields. Where I was taken. How I was put in a sack. Where I hung. What I heard and saw during the week I was in the sack. Who decided to give a party. How I was brought out. How I was put into a dish over the hot fire and how I was changed in size and color. What the children said. My appearance on the table in the form of a ball of pop corn.

Describe a burning house. Where located. Who lived in it. How the fire caught. What was destroyed. Use in sentences conflagration, hydrant, ward, hose, chief, extinguished, confusion, illuminated, fireman, uniform, cylindrical, diameter.

Conversation on flowers. Parts of the flower. Receptacle, calyx, perianth, stamen, pistil, petal, sepal, filament, anther, pollen, ovary, style, lobed.

Description.

A grain of corn. A poppy. A hose. A book. A saucer. Grass growing. A clover field.

Describe the sound of driving nails,—heavy, regular, monotonous. The sound of a pen writing,—scratching, harsh. The sound of breathing,—regular, monotonous, labored, soft, slow. The sound of scratching on glass,—gritting, scraping. The feeling of carpet,—hard, rough, soft. The feeling of wood, velvet, cotton cloth, steel, dough.

Describe the smell of a clover field, peppermint, cinnamon, vanilla. The taste of olives, nuts, bananas, vinegar.

OCTOBER

Poem study.

Poems selected from Course of Study.

Stories.

John Smith, Henry Hudson, Old Indian Legends, Roman History Stories, Guerber. Dramatize two stories.

Written work.

One written exercise a week. Emphasize drills containing contractions. Dictation exercises in the form of poetry.

Drill.

Daily drill in use of verbs. Place the form on the board and have them used in sentences, as,—see, sees, saw, has seen, have seen, had seen; run, runs, ran, has run, have run, had run. Drill in the comparative form, as,—tall, taller, tallest; beautiful, more beautiful, most beautiful. Use in sentences: Easy, easily; wise, wisely; strange, strangely; true, truly; happy, happily; rapid, rapidly.

Conversation.

Cotton. Where it grows. Name the countries. When it is planted. Who plants it? How? How long it takes to grow. When picked. How? Describe a cotton field in bloom. When and how the cotton is carried from the fields. How it is baled. A cotton-gin. Have the children draw a cotton-gin on the board and describe it from the drawing. Describe how cotton cloth is manufactured. Ref. Book Young People's Encyclopedia, Cary. Name the articles made from the cotton. Note—In this work be sure that the pupils keep in mind that they are learning to talk well, to construct sentences, to avoid connectives, to select the words canoes, wampum, arrowhead, blanket, moccasin, squaw, chief, papoose, bow, quiver, tribe.

Thanksgiving. The Pilgrims. Who were they? Why did they come to America? The privations and sufferings of the Pilgrims; life in America. Dress. The first Thanksgiving. Use many pictures. Use the words custom, tradition, anniversary, proclamation.

Describe a picture. *The Pilgrims going to Church.* Tell why they are armed. Compare manner of dressing with dress of today.

Describe a pumpkin, an ear of corn, an apple, a cat-tail. Introduce new descriptive terms into each exercise.

A pumpkin.

A pumpkin is a large, yellow, globe-shaped fruit that grows close to the ground on a trailing vine with heart-shaped leaves. Inside the tough yellow rind is a creamy edible layer which is used for pies. Inside is a space partly filled with seeds and pulp. Develop the words edible, pulp.

A cat-tail.

A cat-tail is a flowering aquatic plant. It grows in tall spikes in marshy places. It has a thick, tough, juicy stem and has long leaves which grow about the stem. Its flowers are downy, cylindrical spikes and dark brown in color growing at the top of the plant.

Give a written exercise once a week. Write a letter. Reproduce dictation exercises for punctuation. Write an invitation.

DECEMBER

Poem study.

Select poems from the Course of Study.

Stories.

The Story of Pip from *Great Expectations. Blue Beard*, Children's Hour, Vol. I. *The Ram and the Cattle*, Children's Hour, Vol. I. *The Timid Hare and the Cruel Lynx.* Dramatize—*Birds' Christmas Carol.*

Conversation.

Christmas. Why Christmas is celebrated. How it is celebrated in different countries. Use pictures.

The Christmas Tree. Describe a Christmas tree you have seen. What gifts will the girls look for from the tree? The boys? What the older people might like to see on the trees.

New Years's Day. What resolutions are you going to make on New Year's Day? Tell about a party you are planning for that day. How we are going to enjoy New Year's Day.

Christmas gifts. How to make a blotter, a calendar, a basket, a pencil holder, a letter holder.

Describe a Christmas tree, a clock, a light bulb, a drum.

Daily drill.

Bring, take. Verbs found in reading lessons. Adjectives and adverbs. Pronouns.

JANUARY

Poem study.

Select poems from the Course of Study.

Stories.

Stories from "When Michigan was New." Greek myths. Stories from the Masters.

Dramatize good stories from readers.

Drill.

Freeze, freezes, froze, has frozen, have frozen, had frozen; blow, blows, blew, has blown, have blown, had blown.

Review old verbs. Use the words fierce, fiercely; soft, softly; bitter, bitterly. Drill on "He doesn't," "They don't" in sentences.

Conversations.

Coal. Describe the warmth of the world centuries ago. Swamps of warm water. Plants that grew in the swamp. Disappearance of swamps. The dirt became rock.

N. B.—Give one period to information getting and another to conversation on the subject. Let one lead. He will prepare thoroughly and the others may ask questions and supply information. Use the words swamp-land, carbon, enormous, jungle, ferns, pulp, fuel, hard and soft coal.

How a cement walk is made. How is the cement mixed? How is it put down?

Chocolate. Discuss cocoa bean from Mexico and South America. Who first used it? Tell about the cocoa tree. Height (20 or 30 ft). Where it grows. Shape of nuts. (Almond.) How they lie in the pods. Sent in burlap bags to market. They are sent to the chocolate mills of Milton, Massachusetts. Baker & Pierce are the owners of the mills. How the beans are cleaned from dust. Where the process is carried on. Tell how the cocoa is ground and made into chocolate. Dropped from winnowing machines into hoppers. The machines are capacious and grind the cocoa into a fine paste. How the cakes are made. They are put into oblong molds. These are placed in automatic molders. Machines are operated by steam. Chocolate is sweetened by fine sugar and flavored with vanilla beans.

How chewing gum is made. Have some one begin this talk by telling about the zapote tree of Mexico and Central America. Tell of the resemblance of the fruit to a russet apple. The taste is similar to ice cream. Mr. Adams of Brooklyn discovered that by boiling the sap of this tree it would become like rubber, and rubber gum was manufactured. Tutti frutti gum was made of this sap. The sap is called chicle. It is sent to our country very dirty. It is cleaned, melted and sent to a gum factory. It is boiled, flavored with oil of wintergreen and sweetened with sugar. It is stirred with a revolving paddle. It is said that only twenty-five people in the world can boil gum right. When it is cool it is mixed like bread, made into loaves, rolled through a machine, wrapped up, sent to market. Cleveland and Chicago are the two greatest markets.

FEBRUARY

Poem study.

Select poems from the Course of Study.

Stories.

Dramatize two or three. Select stories from American History, Fifty Famous Stories, Greek Myths, Parsifal. *Iya, the Camp Eater,* Old Indian Legends. *The Timid Hare and the Cruel Lynx.*

Drill.

Select verbs, adjectives and adverbs from other work. Drill daily on the irregular verbs. Use the six forms in sentences, as,—eat, eats, ate, has eaten, have eaten, had eaten; begin, begins, began, has begun, have begun, had begun; drink, drinks, drank, has drunk, have drunk, had drunk.

Conversations.

Peanuts. Grown in Virginia. On vines. Peanut factories, (oil, butter). How they are cleaned. (1.) In a cylinder. (2.) In a sluiceway. How they are sorted. Shells used for horse bedding. Oil extracted by druggists.

Lincoln, Washington, Grant, Longfellow. Commit quotations from Longfellow.

Care of the teeth.

Descriptions.

A fur cap. A tooth. The skin. A picture. A piece of statuary.

A tooth. Use the words crown, root, gum, enamel, blood-vessels, nerves, cement, pulp, cavity, incisors, canines, molars, dentine.

A cap. Kind of fur, lining, rim, band, interlining.

The skin. Use the words dermis, epidermis, glands, follicles, cuticle.

MARCH

Poem study.

Select poems from the Course of Study.

Stories.

Iktomi and the Fawn, Old Indian Legends. *The Monk and the Bird.* Story of Daniel Boone. Story of Pandora. Story of Apollo. Story of Napoleon.

Dramatize a story from the readers.

Daily drill on verbs, pronouns, adjectives, adverbs.

Weekly written lesson. Reproduce a paragraph. Write a punctuation exercise from dictation. Write a poem from memory. Write a letter.

Conversations.

The weather. Care of the finger nails. Courtesy. Table manners. How sugar is made. Cotton.

Describe the sounds of wind in the chimney, sawing wood, unloading coal; the taste of pickles, pie, cheese, olive-oil; the smell of cabbage-cooking, beefsteak; the touch of flour, mud, marble, fur, linen.

Try to describe each with one or two words, as,—The saw makes a harsh, grating sound in the wood. Pickles taste sharp, acid and sour.

Beefsteak has an appetizing, savory smell when it is cooking. Mud feels soft and slimy.

Describe a dictionary, an ink-well, a dining table laid for dinner.

APRIL

Poem study.

Select poems from the Course of Study.

Stories.

Myths from Classic Myths and English Literature (Ginn & Company). Stories from Sarah Cone Bryant's How to Tell Stories. Stories from When Michigan Was New. Child Stories of the Masters.

Conversation.

Brook trout fishing. The cocoanut palm. Big trees in California. The ostrich.

The ostrich. Native of Africa; lives to be over sixty years old; lives on seeds, grass, leaves, beetles, snakes, lizards, sand, grit, bones; eggs —from sixteen to twenty-five in a nest; egg shell—very thick and hard, used for drinking vessel. Ostrich farming. About ninety feathers are taken from each male bird. Timid, shy but very strong and enduring. There is an ostrich farm in California owned by Edwin Cawston. Every year he sells $3,000 worth of infant ostriches at $20 each, and receives $10,000 a year admission to the grounds.

Describe pussy-willows, a bud.

Describe the different sounds of the wind, as on a stormy night; in November; in the chimney; at night. Use the words howling, sighing, whistling.

Describe the sound of a bell, of wagon wheels, of a clock.

Describe the smell of flowers, apple-blossoms, peach-blossoms, orange, mustard, vinegar.

Describe the touch of soapstone, a plate, silk, rubber, as—Rubber is hard and elastic to the touch. An orange has an aromatic, fragrant smell.

Daily Drill.

Go, goes, went, have gone, has gone, had gone; does, do; shall, will. Adjectives and adverbs. Four written lessons.

MAY

Poem study.

Select poems from Course of Study.

Stories.

From Sarah Cone Bryant. Dramatize stories from the reader.

Drill.

Verbs, pronouns, adjectives and adverbs. Memorize choice selections. Write them from memory.

Conversations.

Fishing. Birds. Wool. Memorial Day. Plant seeds in a box and watch their development and growth. Discuss.

Example.

Fishing. Discuss bait, tackle, kinds of fish, habits of the fish, the best places, the best times to fish. Describe the various fish to be caught.

Wool. The sheep ranches. Where? How the wool is obtained. How it is packed, transported, cleaned, made into yarn, thread, etc., dyed, woven. Use pictures, descriptions, etc.

Descriptions.

Rain at night. A thunder shower. A soft, summer rain. A storm.

Water—liquid, mobile, transparent, clear, elastic, lustrous, polished surface, colorless.

Oil—transparent, slightly colored, clear, smooth, greasy, elastic, liquid.

Iron—heavy, dark, compact, not elastic, solid, resistant.

Describe a dollar.

Tell how a box is made; a stool.

FIFTH GRADE

SEPTEMBER

Aim. Increase the vocabulary. Get good, clear, correct expression. Have the children acquire a ready use of words and the habit of associating objects and appropriate terms.

Stories.

From Guerber's *Stories of the Romans*. Roman Myths, The Children's Hour, Book II. Dramatize two stories.

Drill.

Use orally in sentences the words almost, most, bring, take, fetch; he and I; she and I; him and me; her and me; is, are.

Drill on lists of irregular verbs used in sentences, as, go, went, gone, has gone, have gone, had gone.

Written work.

Write a letter. Write an exercise in use of abbreviations. Write a dictation exercise in use of punctuation marks. Write a poem from memory.

Conversations.

Subjects:—Wheat, corn, a burning house, a hose, a nutting party, a flower.

Wheat:—Where grown, when planted, how planted. Seed, parts of the seed, roots, shoot, stalk, leaves, flower. Care of the wheat. Harvesting. The making of flour. Shipping.

Corn:—Where grown. A corn field. How cared for. Harvesting. Shipping. Use. Use in sentences the words maize, husk, hominy, cornmeal, syrup, pop corn, stalk, tassel.

Impersonate a ball of pop corn. When I was planted. How I grew. Who cared for me. How I was nourished. When I was taken from the fields. Where I was taken. How I was put in a sack. Where I hung. What I heard and saw during the week I was in the sack. Who decided to give a party. How I was brought out. How I was put into a dish over the hot fire and how I was changed in size and color. What the children said. My appearance on the table in the form of a ball of pop corn.

Describe a burning house. Where located. Who lived in it. How the fire caught. What was destroyed. Use in sentences conflagration, hydrant, ward, hose, chief, extinguished, confusion, illuminated, fireman, uniform, cylindrical, diameter.

Conversation on flowers. Parts of the flower. Receptacle, calyx, perianth, stamen, pistil, petal, sepal, filament, anther, pollen, ovary, style, lobed.

Description.

A grain of corn. A poppy. A hose. A book. A saucer. Grass growing. A clover field.

Describe the sound of driving nails,—heavy, regular, monotonous. The sound of a pen writing,—scratching, harsh. The sound of breathing,—regular, monotonous, labored, soft, slow. The sound of scratching on glass,—gritting, scraping. The feeling of carpet,—hard, rough, soft. The feeling of wood, velvet, cotton cloth, steel, dough.

Describe the smell of a clover field, peppermint, cinnamon, vanilla. The taste of olives, nuts, bananas, vinegar.

OCTOBER

Poem study.

Poems selected from Course of Study.

Stories.

John Smith, Henry Hudson, Old Indian Legends, Roman History Stories, Guerber. Dramatize two stories.

Written work.

One written exercise a week. Emphasize drills containing contractions. Dictation exercises in the form of poetry.

Drill.

Daily drill in use of verbs. Place the form on the board and have them used in sentences, as,—see, sees, saw, has seen, have seen, had seen; run, runs, ran, has run, have run, had run. Drill in the comparative form, as,—tall, taller, tallest; beautiful, more beautiful, most beautiful. Use in sentences: Easy, easily; wise, wisely; strange, strangely; true, truly; happy, happily; rapid, rapidly.

Conversation.

Cotton. Where it grows. Name the countries. When it is planted. Who plants it? How? How long it takes to grow. When picked. How? Describe a cotton field in bloom. When and how the cotton is carried from the fields. How it is baled. A cotton-gin. Have the children draw a cotton-gin on the board and describe it from the drawing. Describe how cotton cloth is manufactured. Ref. Book Young People's Encyclopedia, Cary. Name the articles made from the cotton. Note—In this work be sure that the pupils keep in mind that they are learning to talk well, to construct sentences, to avoid connectives, to select words and to eliminate unnecessary terms, to arrange their ideas logically.

In conversation work assign the topic beforehand, and have the children look up the subject and help to prepare a blackboard outline of topics.

In another succeeding lesson let the children impersonate articles, as a calico dress, a boy's blouse, a piece of lace.

Sugar. Where it is grown. How. Process of making sugar. Separating sugar from molasses. Paper made from sugar cane. Use pictures of plantations, mills, etc.

Coal mining—as a topic of conversation.

How to make a wall bracket, a picture frame, a clothes hanger.

How to write a letter.

Care of the teeth.

A tooth—its parts, crown, root, nerves, gum.

The hair—roots, glands, nourishment, cleanliness.

A concrete walk. How laid. How the concrete is made. Its appearance. Its durability.

NOVEMBER

Select poems from the Course of Study.

Stories.

Roman History. Indian Legends. Some Great Stories and How to Tell Them, Richard Thomas Wyche, Newson & Company. Classic Myths, Gayley. When Michigan Was New. Guerber's Stories of the Romans. Stories of the Pilgrims. Colonial stories. Dramatize two stories.

Daily drill work.

Drill for a few minutes each day on the use of irregular verbs. Place on the board lists of the verbs as follows and have them used in sentences: leave, leaves, left, has left, had left, have left. Adjectives and adverbs, as slow, slowly; hearty, heartily; quick, quickly. Pronouns—he and I; she and he; her and him; him and me; who, whom. Use learn, teach; let, leave; stay, stop.

Conversations.

Election. The Indians. Behavior in public places. Electricity. Thanksgiving Day.

Election. On what day does election take place? What officers are elected in November? Who are the candidates for governor? How do the men vote? Who votes in Michigan? Explain nominating, ballot, caucus, opponent, defeat. Use in sentences. (Keep this brief.)

The Indians. Early life in America. Customs of the Indians. Dress. Wigwams. Mode of living. The Pilgrims.

Behavior in public places—in school, on the grounds, at church, on street-cars. Treatment of others.

Electricity. Electricity is an invisible agent of the atmosphere that may be made active and poweful by friction or causing its particles to be put in motion. When it is in motion it is called current electricity. It passes instantaneously through metallic conductors. It will magnetize iron and steel when conducted around the metal. By controlling electric currents, trolley-cars are run, electric heating and lighting plants are put in motion, and many other modern inventions have been caused by electricity. Name some of the machines, etc., run by electricity.

Use in sentences—friction, particles, conductors, metallic, magnetize, inventions.

Who is the modern genius in the discovery of the use of electricity? Look up the life of Thomas Edison. Who is Nikola Tesla?

Thanksgiving Day. Why is it celebrated? What is a proclamation? Tell the story of the first Thanksgiving Day.

Description.

The dress of the Puritans. A Thanksgiving dinner. The clock. A window. A door. A skate.

A skate. Skates are steel appliances made to fit the feet and so formed that they may be made to carry the wearer swiftly over the ice. The upper part of the skate is shaped to the foot and rests upon a bar called the runner. The runner is narrow, smooth and sharp and curved upwards in front. The skate is fitted with clamps which fasten it and hold it firmly to the sole of the shoe. Some skates are held on by straps. Roller skates are mounted on wheels instead of runners. There are two wheels in front and two at the back. The skates are propelled by the wearer and much practice is necessary to make him skillful.

DECEMBER

Poem study.

Select poems from the Course of Study.

Stories.

Selected from Roman History Stories. Guerber's Stories of the Romans. Gayley's Classic Myths. American History Stories. Children's Hour. Wyche's Great Stories and How to Tell Them. Eugene Field's *Story of the Moonbeam.* Dramatize two stories.

Drill.

Verb drill daily. Also adjective, adverb, pronoun. Four written lessons during the month.

Conversations and oral composition.

Why we celebrate Christmas. Christmas gifts. A red sweater. A china vase.

Have the conversations assigned beforehand so that the children may look up information. Also assign a leader. Let the children help to arrange a blackboard outline, select words to be used, questions to be discussed.

Impersonate a red sweater. Preparation. Make a study of the sheep regions. Carpenter's Geography and other references. Read about the manufacture of wool. Assign topics to different pupils.

I. When I was on the sheep's back. Life on the ranch. Who was my master. How I grew. How much I was admired. How large the ranch was. How I was superior to other wool. The conversation I overheard one day between two men. How frightened I was.

II. What happened the next morning. I was separated from my master. He was happy. I was disconsolate. I was thrown with other wool. How I felt.

III. I was baled. Put in a wagon and carried to the station. The ride. The conversation I overheard between the driver and his companions.

IV. My first glimpse of a railroad station. (Somewhere in the west, Cheyenne, for instance.) Cowboys, hides. How I made a hole in the sack and peeked out. What I saw and heard. I made some new acquaintances.

V. The journey from Cheyenne to Chicago. It was in August. On what road. How long it took. The wreck we were in.

VI. Our journey over the wheat lands and corn lands. Our entrance into Chicago.

VII. My life in a factory. How I was made into beautiful yarn. How I was colored.

VIII. How I was sold to a sweater maker. How I was made into a beautiful red sweater with a sailor collar and trimmed with pearl buttons.

IX. I was hung in a store. It was the Christmas season. I was put in the show window. I was much admired. I dreaded the long, dark nights. I watched for the morning. The passers-by. The clerks. How I was purchased for a Christmas gift and put on the tree. What the gifts on the tree talked about. Xmas eve when all were asleep.

X. How I spent the rest of my life. How I was worn out. Put in a ragbag. Taken out to tell my story.

Describe a Christmas picture. A Christmas tree. A pearl button. The sound of sleigh bells, of skating, of laughing, of talking. The taste of orange, of cloves, of almonds. The smell of pine, of paint, of kerosene. The touch of ice, of snow, of putty, when hands are plunged in water. Use the words aromatic, fragrant, repellant, elastic, pungent, stinging, spicy, agreeable, jingle, cheery, merry, circular, disc, shank, perforations, bitter.

JANUARY

Poem study.

Select poems from Course of Study.

Stories.

Selected from references of previous month. Dramatize two stories.

Daily drill.

Use in sentences the words go, goes, went, has gone, had gone, have gone. I shall go. You will go. He will go. She will go. We shall go. You will go. They will go.

Use in sentences:—short, shorter, shortest; soft, softer, softest; loud, louder, loudest; quiet, quietly; angry, angrily.

Drill.

It was I who wrote it. It was she who wrote it. It was they who wrote it. Was it they who came? Was it he who came? Was it she who came?

Give four written lessons during the month. Conversations. Impersonations. Oral compositions. Descriptions. Adages in stories.

Describe a doorknob, a wheel, a picture, a house, a cellar, a house plant.

Sound, taste, smell and touch impressions.

For conversations and oral compositions.

How a table is made. Salt. Tea. Rubber.

Adages.

All is not gold that glitters.
Quick to forgive, slow to anger.
It always pays to be a gentleman.
Think twice before you speak.
He that is slow to anger is better than the mighty.
Denying a fault doubles it.

Place an adage on the board and require the children to make up stories that will illustrate it. Example.

"If you want a thing done well, do it yourself."

Togo, the dog, and Yellowback, the cat, were lying on the back porch sunning themselves in their usual lazy fashion. Togo and Yellowback were very good friends in spite of their differences in race, color and habits. Yellowback was very fond of mice, rats and nice fat squirrels, but Togo preferred to have his meals cooked in the house and served after the family breakfast and dinner. Yellowback had learned from experience that he was on no account to touch Togo's meals. These were placed on the back porch twice a day by the cook. They were served on a cracked, gold-edged plate kept for that purpose, and which Togo always kept clean and nice. Twice a day also Yellowback was served milk in an old blue saucer and was required to find the rest of his food for himself.

As he lay on the porch he remarked to Togo, "I do wish I had that nice fat squirrel that is running along the branch of that elm tree. Will you get him for me? You are so much better at catching them than I."

Togo, who was an Irish setter and naturally very fond of chasing birds and squirrels, said, "Yes, indeed, I don't care for squirrel meat myself but I shall be very happy to oblige you. I would enjoy a run myself just now, anyway. I was just wishing that the master would take me for a run in the woods."

Just then the squirrel started down the side of the tree on the farther side, and Togo went down the path softly. The squirrel who was very young and inexperienced, touched the ground just as Togo reached the tree. The dog pounced upon her. He had the neck of the squirrel between his teeth, and the cat had arisen to join him, when the door opened, and his master came out with a gun in his hand read to start for the wood. Togo immediately forgot all about the squirrel and the cat. He dropped the animal and bounded over the fence to run ahead of his master.

The cat started down the path, but the squirrel was already half way up the tree. "If you want a thing done well, do it yourself," she meowed spitefully, as she looked after the figure of the dog racing over the hill.

Insist that all stories be strictly original.

FEBRUARY

Poem study.

Poems selected from the Course of Study.

Stories.

Dramatize two stories from the readers. Tell stories of Washington, Lincoln, Longfellow, Lowell.

Drill every day on irregular verbs in sentences, pronouns, adjectives and adverbs, comparatives.

Use the following: may, come, can, run, in all forms; charming, charmingly; noisy, noisily; bad, badly; good, well.

By whom were you sent?
From whom was it received?
To whom did you give it?
Whom can you tell of it?

Study *The King of the Golden River*. Have the story told in sequence. Vizualize and describe the pictures. Study and use the choice words.

Describe: *The Southwest Wind. The Treasure Valley. Each of the Black Brothers. The King of the Golden River. The Trips up the Mountain.*

This is one of the most valuable stories that can be used in a fifth grade. The beauty of the descriptions, the freshness of the style and treatment, the moral lesson and the richness and variety of language make it well worthy of a month's study. It is worth more than a great number of ordinary stories. Have the children make free use of the words and add many of them to their vocabularies.

Adage. Base the original stories on adages. Have them brief; use good language. Each story must illustrate the point of the adage.

Impersonate a spool of thread. Planted in a field in South Carolina. When. How cared for. How I grew. When I was picked. I was put into bales. Where I was taken. I was put through a cotton-gin. How and where I was manufactured. How and where I was put on a spool. To what store I was sent. Who bought me. How I shall be used.

Describe a cotton-gin, a battle. Discuss firearms used in the Revolution and in the Civil War.

MARCH

Poem study.

Select poems from the Course of Study.

Use and explain the meaning of lie, lay, sit, set. Drill on adjectives and adverbs, comparatives and superlatives. Use of pronouns as in previous months.

Stories to tell.

The Vision of Tsuno, Children's Hour, Vol. II. *Rip Van Winkle. Base original stories on adages.*

Conversations and oral compositions. The thermometer tube. Impersonate. Give a character sketch of Rip Van Winkle. Give a character sketch of Dame VanWinkle. A talk on the weather.

Describe a thermometer, a cloud, a snowstorm, sounds, tastes, odors, touch impressions, music, horses' hoofs on the pavement, the smell of onions, the feeling of mud on the feet.

Type impersonation.

The thermometer tube tells how it was made.

They tell me that I am composed of a variety of materials such as lime, lead, potassium, soda, iron, tin. My first recollection is a confused memory of a porcelain house in which I lived for weeks. This house was called a crucible and it was intensely hot. I like the heat, however, and I soon learned to know the face of the master workman who came to test me very often with a thermometer. One day some strange men came with him. He tested me again and they talked for a long time. After that I was poured out of the crucible into iron molds. I lay in these molds for several weeks and became colder and harder every day. When I was quite cold other men came and polished me until I shone. I was heated again to a very great degree of heat, and this time I did not like it so well for I had become used to being cold. When I had cooled once more, I was polished until I shone bright and resplendent. I was a great sheet of glass worth thousands and thousands of dollars. I was very proud when the men came and looked at me and said how clear and transparent and beautiful I was. The next that I remember is that I was a small part of the glass sheet and some glassblowers were looking at me. Again they put me in the crucible and heated me to a very high temperature. Then a workman put a blowpipe into my side and I became about the size of an apple. A little more glass was added. Then I was rolled out and kneaded like bread on an iron board.

Another workman came and put a blowpipe into me and the two men blew fiercely. In a second or two I became changed into a long tube about three hundred feet long and about as big as one's finger. I was cut off from this and again heated and blown into a tube with a bulb at one end. I was filled with mercury before I was cool and the upper end was closed. Then I was mounted on a thermometer. I was taken to a store where I was placed in a window with many other thermometers just like me, all new and shining, mounted on bright colored boards. There were numbers beside us to indicate the temperature. When I am cold the mercury shrinks and falls in me, and when I am warm it rises. Folks have learned this and when they wish to know the temperature of a room they look at me. The figures at my side indicate where the mercury stands, and they know whether the room is at just the right degree of heat or not.

One day a nice, kind looking man stopped outside the window and looked at me. He came into the store and talked for a few minutes to the clerk. Then the clerk took me from the window, wrapped me up in paper and I came here in the pocket of the kind-looking man. He hung me on the wall and when I looked about I saw the room was filled with children all smiling and looking at me. I like this place and am very happy here.

APRIL

Poem study.

Select poems from the Course of Study.

Stories.

Selected from Children's Hour, Roman History Stories, Bryant's How to Tell Stories, Wyche's Stories and How to Tell them.

Dramatize two stories. Dramatize *The Birds of Killingworth.*

Drill work.

Use irregular verbs in sentences each day. Give drill on the adjectives and adverbs. Use of the pronoun.

Give four written lessons during the month.

Conversations, oral compositions and impersonations.

Describe Millet's *Angelus.* Study the story of the Angelus in Child Stories of the Masters.

Describe the birds observed thus far. Use pictures. Learn of their characteristics, habits, migrations and songs. Have pictures of the birds. Describe buds of native plants. Describe leaves.

Conversations.

Birds. Twigs. Rain. How to care for new books and how to open them. A thermometer. Care of the hair.

Impersonate a robin. I have just returned from the south where I spent the winter. What I saw. The trees and flowers. What I did. The kind of country I lived in. What the people did. What grew there: My journey north. What I saw and heard. I am looking for a site for a home. Where I shall locate. What my nest will be. How I shall make it. What will be in it.

Oral composition.—Yellowstone Park. Where located,—size, extent, mountains, geysers, wonders of various kinds.

MAY

Memorize poems selected from the Course of Study.

Stories.

Selected from April references. Dramatize two stories. Nathan Hale, Leonidas, Paul Revere, Arnold Winkelried. An original story based on an adage.

Daily drill.

Use in sentences,—climb, climbs, climbed, has climbed, had climbed, have climbed; write, writes, wrote, has written, had written, have written; rise, rises, rose, has risen, had risen, have risen; raise, raises, raised, has raised, had raised, have raised; drink, drinks, drank, has drunk, had drunk, have drunk. Use great, greater, greatest; few, fewer, fewest.

Describe the big trees of California. A thunder shower. Flowers. Leaves. Rocks. Trees. Sounds. Touch impressions. Taste impressions. Odors.

Make up a conversation between the graphite of a lead pencil and the wooden case. Example:—"Oh, dear," said the graphite looking at the calendar, "if this isn't the third anniversary of our first meeting and you never even mentioned it." "Is it so?" asked the wooden case stupidly. "Well, anniversaries never did mean much to me." "Dear me," said the graphite, "how I wish I were back in my old home in Vermont. How well I remember the day the miners dug me out and tore me away from my old home in the mines. I love the dark, and no wonder, for all my long life was spent in the darkness down there in the mine with my family. The home I came from was one of the very richest in the world too. Yet I must work like a common creature wearing my life away in a schoolroom, scratching for a living. I belong to the same family as the great Kohinoor diamond. Think of that. I am almost pure carbon, yet here I am held in a case of mere common pine and living in a dusty schoolroom."

"I didn't meet you in a mine," remarked the case.

"No, I had many experiences before I met you. I was put through reducing mills and pulverized and washed and dried and packed in a barrel—an old common barrel—so that my own mother wouldn't have known me at last."

"What a strange life, to be sure," remarked the wooden case. "You have never told me of your experiences before. I wonder why."

"Oh, I don't know I'm sure unless it's because you are so wooden," went on the graphite, "you couldn't melt no matter how pathetic my story is. Well, one day I heard the workmen say I was not hard enough for work, and they decided to mix me with some common clay. So I was put into a canvas bag with clay and water and we were ground together under stones. One of these revolved many times. We were left under hydraulic pressure, as it was called, for a long time until we were just like putty. Of course we were curious to know what would happen next. After a while we were put into a long cylindrical shaped tube and drawn out like wire. I was then cut off from the wire. Then I met you."

The graphite sighed and went on. "But today I wish I were in my old home in Vermont, and back in the darkness of the mines with my own family. This common clay irritates me and you are no company for me. You are so still and solemn. Besides, you make me do every bit of the work. It is I who must write all the exercises for the boy who sits in this seat. I must work his problems and sometimes he bites off my head, or breaks particles from me. I shall soon be killed off by such treatment."

"But you are educated and I am not," said the case. "I could not write exercises for I am such a woodenhead they could never teach me anything."

"Oh, well, you've been very kind to me after all," said the graphite more gently, "you have protected me just as much as you could. I wouldn't have lasted a day if it were not for you."

"And he whittles me, too, and cuts me up dreadfully but I've never mentioned it. I'm sure I've taken care of you the best I could," said the case; "but here he comes."

"And now I must work his problems," sighed the graphite. "Hold me tight or he will break off my head."

Make up a conversation between the pen and the holder; between the ink and the inkwell; between the paint and the desk.

SIXTH GRADE

Have the pupils keep note books in which they will list the irregular verbs that are used in the daily drill work. Each day require them to use the words in sentences. Give daily drill in the use of comparatives and superlatives, also in the use of adjectives and adverbs and personal pronouns. In almost every locality there are certain localisms that are used habitually, as, "John has to pack water." Place the correct forms of such expressions on the board and let them stand for daily drill work. Have pupils keep lists of the words added to the vocabulary and encourage them to use them.

Teach one poem every month. Select them from the Course of Study. Teach them orally with expression, and bring out the beauty and rhythm of the poems. Give careful attention to the pitch and modulation of the voice.

Other stories to be added to the list: Jean Valjean from LesMiserables. Cosette, Little Women. Henry VanDyke's *Blue Flower.* Ichabod Crane in *Legend of Sleepy Hollow.*

Tell stories and require the pupils to tell them. Dramatize one a month. Let the children make up the conversations and take the parts. For instance the life of Boone.

Suggestive list of references: Children's Hour Series. Sarah Cone Bryant's How to Tell Stories. Wyche's Stories and How to Tell Them. Guerber's Stories of the English. American History Stories. Biographies of Great Men.

Short stories from Hawthorne, Poe, Maupassant, Stevenson, Dickens, Thackeray, Lamb.

Each week's work should include one written lesson, daily drill in correct forms, poem study for a few minutes each day, short story telling and either oral compositions, original stories, descriptions, conversations and reproductions.

Aim to secure elimination of all that is unnecessary, trite and nonsensical. Every lesson should give information, new words and facility in expression as well as contribute to breadth of ideas and view.

For the daily drill work place on the board lists of verbs, as stand, stands, stood, has stood, have stood, had stood; wake, wakes, woke, has waked, have waked, had waked. Require them to be used rapidly in sentences. Place lists of adjectives and adverbs and require the use of all degrees of comparison, as large, good, well. Place adjectives on the board and have them use both the adjective and adverbial forms—great, grand. Use great, greatly; grand, grandly.

Drill in the use of shall and will. Keep lists of correct forms to take the place of colloquialisms.

The oral composition ought to receive special attention in this grade. It would be well for the children to have a page in their note-books devoted to this work in order to emphasize it. Teach them how to go before the class, how to stand, how to open their mouths and use their vocal organs. Impress upon them the need of having all information arranged in consecutive order and of expressing themselves in short, clear sentences. It is necessary to emphasize the need of avoiding the use of connectives, eliminating unnecessary words and irrelevant matter. Encourage them to keep the compositions interesting, bright and original and to use their judgment in making plans and outlines, in selecting the best material and in the form of presentation. Encourage them to correct each other with tact and courtesy.

SEPTEMBER

Poem study.
Daily drill.
Weekly written lesson.
Story-telling.
The oral composition. Rubber. Wheat.

Descriptions of sense impressions, touch impressions, sound, odors, tastes. Touch—scalding water, soap, molasses. Taste—olive-oil, ginger, molasses. Odors—cedar, oil-cloth, decaying vegetables. Sound—school-bell, reaper, mower, water from a hose.

Rubber. Assign the topic the day before the lesson. Have the children look it up. Discuss the arrangement of the outline and the assignment of topics.

Outline. Where the rubber tree grows. In what zone, countries, kind of soil. The tree—appearance, height, age, leaves, trunk, sap. Describe the banks of the Amazon. Peculiarities of soil, climate, vegetation.

Tell how the trees are tapped, sap is caught and what treatment it is given. The cost of obtaining it. Give some specific instance of rubber making. How it is obtained in some locality by a certain company. Describe the process of making it into rubber. Describe the journey down the Amazon and up the Atlantic to Boston. Tell how rubber is made into rubbers.

Wheat. What are the great wheat producing regions of the world? What people depend mainly on wheat for their subsistence. Describe a wheat field. How wheat is cultivated; machinery used. How it is harvested, stored, transported to flour mills. How it is made into flour. Pillsbury Mills.

OCTOBER

Poem study.
Story-telling.
Daily drill.
Weekly written lesson.
Impersonations.
Descriptions.

Describe a maple leaf. A chrysanthemum. An elm tree. A house. A picture—*The Song of the Lark.* Tell how hay is prepared for the market.

Description. *The Song of the Lark.*

Discuss the childhood, life, studies and work of Jules Breton. What does the picture suggest? What does it tell?

Discuss Millet, a realist, who aimed to make his pictures true to life, and Breton, an idealist, who wanted to make his pictures more beautiful than life.

Impersonation. A pair of rubbers.

Life in the tree in the heart of the Brazilian forest. Tell about the dense forests, the plants, the animals, the birds, the insects, the great river. How I was taken from the tree and boiled. The journey to Boston. Experiences in the factory. In the store.

Describe an elm tree. Trunk, definite or indefinite? Head. Bark. Pith. Wood. Shape—cone-shaped or round. Foliage. Describe the leaf—blade, petiole, stipules; veins—feather-veined, net-veined, parallel-veined; blade, base, apex; margin—entire, serrate, crenate, dentate, lobed. Compare with other leaves.

NOVEMBER

Poem study.
Story-telling.
Daily drill.
Weekly written lesson.

Conversations. The Pilgrims. Thanksgiving Day. Plymouth Rock. Miles Standish.

Dramatize Miles Standish. Tell the story of *The Great Teacher*, Wyche. Have the story told in sections by different pupils and repeated many times.

Before telling this story, give the children vivid word pictures of western Asia. Let them see mentally the hills and Lake of Galilee, the little towns connected by the paved Roman roads, the kinds of boats that dotted the lake, the primitive life of the simple fisherfolk, the Great Teacher. Show them pictures. Encourage them to tell what they know. Visualize the scene.

Oral composition. The nebular theory. Origin of the solar system. Origin of the earth. Its development through different stages. Hold the composition to simple terms and visual images.

Impersonation. A Coral Pin.

How I was broken off from a coral reef. Where I had lived on an atoll in the warm waters of the Indian Ocean. The island. The lagoon. Who came and found me.

DECEMBER

Poem work.
Daily drill.
Weekly written lesson.
Story-telling.

The Moonbeam's Story. *Christmas Carol*, Dickens. *The Holy Night*. Child Stories from the Masters. Quotations committed to memory, also Twenty-third Psalm.

Conversations. The Christmas Spirit. Christmas Giving.

Original Story. *If I were Santa Claus.*

Describe some Christmas picture in which the children are interested. Describe or impersonate a Christmas tree.

Oral composition. Electricity. Explain that electricity is an invisible but powerful agent of the atmosphere, that can be put in action by friction or exciting its molecules into motion. Active electricity is called current electricity. When electricity is inactive it is said to be static. When it is in motion it is said to be dynamic. Tell how Benjamin Franklin first drew an electric spark from the clouds by means of his kite and door key. Lightning it was, but lightning is simply one form of electricity. Talk of Edison, Tesla, Morse, Marconi. Discuss the motor car, telegraph, light, heat, cooking apparatus and numberless conveniences made possible by electricity.

Discuss some simple methods of developing electricity by rubbing glass, rubber, amber, sealing wax. They will attract bits of paper. If you rub a cat's fur the wrong way on a cold night, sparks will fly. Shuffling your feet briskly on Brussels carpet will generate electricity. Electricity seems to be everywhere about us and can be produced by chemicals.

Discuss the galvanic battery. It is simply a glass in which vitriol, sal ammoniac and like chemicals act upon zinc and copper. The dynamo. Study its arrangement. It has a central revolving part operated by a belt driven by a steam engine. Metal brushes press against the revolving part and start a flow of electricity. This current may be used to put trolley cars in motion and sent to electric heating plants, to motors and so on. The dynamo. The incandescent and arc lights. Trolley car. Telephone. Volt. Magnetic. Magnetize. Automobile. Motorcycle. Electric washers. Cooking utensils.

Encourage the children to gather information. (The Home Study Encyclopedia is a good source.) Arrange topics in outline form and assign to different pupils to discuss.

What is electricity? How is it developed? The galvanic battery—what it operates. The dynamo—what it operates. Thomas Edison. Nikola Tesla. Marconi. Morse. The trolley car. The motor car. The electric light. A power-house.

JANUARY

Poem study.
Story-telling. Dramatize one.
Written lesson weekly.
Daily drill.
Descriptions of sense impressions.
Adages. Let the pupils illustrate adages by original stories.

Adage story.

"I am a much more important personage than you," remarked the Haviland cup to the plate that lay beside it on the breakfast table. "Even my form makes me a more conspicuous figure in the world than you are. I can be seen from all parts of the room, while you must remain flat on your back and no one notices you. It all shows that I was born to occupy a higher position that you were." "You are rather high and mighty this morning," remarked the plate quietly, "why so, I wonder."

"Stupid! Didn't you just hear the lady of the house remark what a pretty pattern decorates me?"

"Why, I have just the same pattern as you!" exclaimed the plate.

"Oh, yes, but you can't show it off. I'm up in the world where everyone sees me. That's the difference. How I would like to be down there where you are. One might as well be out of the world as out of sight. It's a pity you can't stand up on edge like the plates in the china closet even. Poor things! They weren't born to it,—anyone can see that,—

they were never meant to stand so high. They must get dreadfully tired and they do look so uncomfortable."

Just then the cook entered the room in a great hurry and brushed past the table. Her wide, heavy skirt struck the handle of the cup which protruded over the edge of the table, and it fell to the floor with a crash.

"Pride goes before a fall," remarked the plate. "Poor thing! For my part, I'd rather occupy a less conspicuous place in the world."

Oral composition. The Ice Age. Assign the topic early. Let the pupils learn how a large portion of North America to the Ohio and Missouri rivers was once covered with ice and snow, probably a mile in depth. Describe the gradual wearing away and melting of the great mass and its effect on the surface of the land. Explain the gouging out of lakes, the digging of river-beds, the wearing of rocks and bowlders. Use and explain terms glacial deposits, stratified rocks, glacier icebergs, debris, drift, talus, retreat.

Make an outline. Assign topics. Let different pupils review the complete outline.

FEBRUARY

Poem study.
Stories.
Daily drill.
Weekly written lesson.
Conversation—The phonograph.
Impersonation—A slice of bread.
Describe a needle, a chair, a lemon, a picture.
Visualize the pictures in Longfellow's poem, *My Lost Youth.*

The Phonograph

I. Who invented it?

II. Tell the story of Edison.

III. Explain how a sound agitates ether just as a stone agitates the water. The sound forms waves in circles receding into space.

IV. Explain the parts of the machine.
  a. The wax cylinder.
  b. The funnel which gathers the sound.
  c. The pen at the end of the funnel.
  d. The drum.

The Story of a Piece of Bread

My early home. How I was sown in a Minnesota field one warm morning in April. My life underground in the dark, soft mold. The long, dreary, quiet days and nights. My effort to reach the surface, to breathe the air and enjoy the light once more. My first glimpse of daylight. How I grew and thrived. My nourishment. My roots. What I saw about me. Who labored in the field all day. What I heard the laborers say. August came. I was tall and handsome and laden with wheat. Machines were seen in the distance. I was told they were to be used in our field. How I was cut. Where I was taken. How long I remained. What mills I was sent to. Describe the mill. What processes we were put through. The great elevators. Life in an elevator. The trains that came to bear us away as flour. The noise and confusion. I began to wish for the old life on the farm, the gentle rains and starry nights. I was sent with other flour in a barrel to a store.

I was sold to a woman and taken to her kitchen. I was placed in a bin in the pantry. The pans and kettles were quarreling. The woman talked of me to a neighbor. I was tried for the first time in her house. The kettles told me about the woman and about her reputation as a bread maker. She took me out of the sack and sifted me carefully. She then prepared the yeast. How? I was put in. After awhile I rose to the top of the pan and looked about the kitchen. She hurried over and put me down again. Again I rose. This time I took a longer look about the warm, sunny kitchen. Again she put me down, but some power impelled me to rise again. Then the woman turned a crank in the pan and we were whirled round and round for a long time. We were packed closely together and after a time formed a ball. Then we were covered up. But again we rose. Then she took us out, cut us up, mixed us with her hands, buttered us and put us in pans. Just as soon as she left us we rose again. Then she put us in a hot, black room. It was very hot and we rose and separated as much as possible. This heat was much more intense than that of the Minnesota sun. I gasped for breath and then she took us out.

We were now in a light, flaky loaf and the family came out to admire us. At last I was cut off of the loaf. I am on a beautiful white table decorated with silver, china and cut glass.

MARCH

Poem study.
Story-telling.
Word drill.
Weekly written lesson.

Describe sense impressions. The smell of mignonette, turkey cooking. The taste of turkey, leeks, pumpkin pie. The touch of ice, rubber, sawdust. The sound of cracking ice, a shot, a hail-stone. Use the words delicious, fragrant, savory, appetizing, palatable, agreeable, offensive, nauseous, strong, bitter, musty, flavor, repellent, elastic, aromatic.

Describe a bell, a fire, a cellar, a picture.

Oral Composition,—*The Great Stone Face.* Read the story. Tell it in sections. Visualize the pictures it suggests. Look up the meaning of the new words and use them in sentences. Use them in reproducing the story. Place on the board lists of words selected from the story and let the children use them in visualizing the scenes they suggest in the story. As—"Ernest himself began to resemble the Great Stone Face." Human countenance, budge, wondrous, visage, wondrous features, spectators, discern, gigantic, perpendicular, majestic.

APRIL

Poem study.
Story telling—Biographies of great men.
Word drill.

Weekly written lesson.

Describe *The Gleaners.* Conversation. Millet.

Dramatize *The Birds of Killingworth.*

Have a number of good references for biographies. Hold to the truth historically, and do not allow them to tell too much. Tell of such men as Edison, Grant, Blaine, Napoleon, Alexander, Burroughs, Audubon, Watt. Accept only authentic stories.

The Gleaners

Conversation. Tell the story of Millet. His childhood. His youth. Hardships of his life in Paris. How he found his way to the Louvre. How he dreamed of some day placing a picture. The revolt in France against the king and his court. Why? Talk about the customs of the farmers, the troublous times. Show a fair sized copy of the picture. Explain how the French did not like *The Gleaners* because it portrayed the sufferings of the poor. Discuss the picture. Explain who the people in the background are; who the oldest woman is; the younger one. Why do we know which is the youngest? Who bends the lowest over her work?

It is evening. How do you know? The laborers are leaving. The farmer according to custom has ordered the gates to be let down that the beggars may enter and gather the stubble. Note the garb of the poor peasants. How the old woman scarcely bends to her work because of her age. Describe the picture.

Keep records of development and growth of seeds and describe their progress. Describe the violet, leaves, arbutus, birds. Name and describe the birds that have appeared thus far. Impersonate a robin.

MAY

Poem study.
Story-telling.
Daily drill.
Weekly written lesson.

Base a story on an adage. Make up a conversation between two objects. Give a character sketch of Ernest in *The Great Stone Face.* A character sketch of Gathergold. Try to get the pupils to use the book terms in describing the characters, as—Ernest—dutiful, pensive, unobtrusive, aspect, veneration, features; Gathergold—shrewd, active, inscrutable, faculty, tribute, commodity, visage. The Great Stone Face—awful, benignant, vista, radiance, marvelous, massive.

Conversations. Birds. Flowers. The weather.

Impersonate *A Bow of Pink Ribbon.*

I. When I was in the cocoon state. How I was reeled into raw silk. Necessary caution in reeling. Worth from four dollars to seven dollars a pound.

II. How the reels are turned, (1) by hand, (2) by electricity. It takes ten hours to reel five ounces of silk. How I was dyed. How I was wound on a spool. How I was made into ribbon. How I was sent from Newark, New Jersey, and purchased by a little girl in the sixth grade and made into a hair bow.

Describe Niagara Falls.

BULLETIN NO. 51

STATE OF MICHIGAN

DEPARTMENT OF PUBLIC INSTRUCTION

Lansing, March 31, 1913.

We are desirous of a general state-wide movement along the line of improving and beautifying school grounds. The need is evident.

In many cases the school grounds in rural districts are too small. The rural school site should contain at least two acres, allowing room for lawn, playground, school gardens and agricultural experiments. Much can be done, however, to improve even a small plat. Trees, shrubs, plants and vines, *native to the locality,* should be planted. Common shrubs like the sumac, such vines as the woodbine, found in the locality can be transplanted. Shrubs should always be planted in groups not more than eighteen inches apart giving a mass effect. Small groups should contain not less than twelve shrubs; some of the largest groups might contain as many as forty-eight.

The importance of improving the environment in which children are being educated should not be overlooked. A child's school training begins when he reaches the school grounds. Rough uncouth school grounds will make a deep and lasting impression on the mind. The effect of a well-kept plat in any community will be noticeable. It is a matter of concern to the whole district.

We are indebted to Professor C. P. Halligan of the Michigan Agricultural College for the plans of school grounds and directions for planting included in this bulletin. The plans are typical and must be suited to conditions.

Very truly yours,

L. L. Wright

Superintendent of Public Instruction.

DESIGNING THE SCHOOL GROUNDS

BY PROF. C. P. HALLIGAN, M. A. C.

The following plans illustrate some of the principles that should be followed in designing the school grounds. Unfortunately the common practice in this state of neglecting to design and plan the school grounds, makes them not only barren and unsightly but also results in the making of school grounds that fail to meet the functions that they should serve. School grounds should be so designed as to appear beautiful and inviting rather than unsightly and repulsive if we desire our school children to like their school work and its surroundings. School grounds also should be so divided and planted as to serve best certain necessary purposes of school grounds. As the local conditions of every plat vary from those of others, the following plans are simply for the purpose of teaching certain general principles that should be followed and the adaptation of these to one's own conditions is the local problem.

Rules for guidance in planting. First, the preservation of open lawn by planting the boundaries and corners and about the base of buildings. Second, planting in masses using few kinds with many of each rather than many kinds with few of each. Third, planting to break the obscure unsightly objects both within and without the grounds and to enhance the more pleasing ones. Next, design the walks in such a manner as to break up the lawn the least and still be the most convenient.

Common errors in planting. Promiscuous planting, that is, dotting of the lawn with meaningless shrubs and trees. Second, over planting as well as lack of plantings. Third, planting stock not hardy or plantings especially subject to insects or diseases. Fourth, school grounds entirely too small to serve their purpose.

Trees to Plant.

Rock or Sugar Maple
Norway Maple.
Pin Oak
Scarlet Oak
White Oak
American Elm
American Ash

Trees to Avoid.

Soft Maple
Catalpa
Poplars
Box Elder
Japanese Maples.
Horse Chestnut

Shrubs to Plant.

Name. Height.

Spirea Von Houttei, 5-6 ft.
Spirea arguta, 4-5 ft.
Japanese Barberry, 2-4 ft.
Common Barberry, 5-6 ft.
Flowering Currant, 3-4 ft.
Spirea Anthony Waterer, 2-2½ ft.
Mock Orange (Philadelphus), 8-10 ft.
Bush Honeysuckle, 6-8 ft.
Weigela or Diervilla, 5-6 ft.
Deutzia lemonei, 3-4 ft.

Shrubs to Avoid.

Common Snowball
Japanese Snowball
Flowering Quince
Dogwood
Large Flowering Hydrangea
Althea
Privet

Number 1. Planting Design of Country School Grounds.

A very small planting plan showing a suggestive arrangement of the grounds for a small country school with the buildings located, as is usually the case, about sixty-five feet from the front and an equal distance from each side of the lot. Unfortunately, with the limited space available on the average school grounds, such a location hardly leaves sufficient room for play grounds and other functional divisions. It is a common fault in Michigan to have our school grounds entirely too small and congested. The plan, however, shows a simple arrangement and division of the grounds with plantings for the same under these conditions. 1. Shrubbery. 2. Shade trees. 3. Out building. 4. Hedge.

Number 2. Planting Plan of School Grounds.

This design is for the school grounds of a small town where unfortunately, the school grounds are very limited in size. In this design, an effort is made to utilize and gain the greatest effect from every portion of the grounds.

The curved entrance walk is most convenient when the travel comes from both directions and when so designed, makes the front lawn appear larger than if cut up by one straight walk. The service driveway for carting in the coal and other supplies as well as for carting away of ashes and other wastes, is often necessary and as so designed, would interfere least with the other divisions of the grounds. The school gardens, located at the back of the grounds, are separated by a low hedge of shrubs, as the Japanese Barberry, from the playgrounds and the space allotted to this division may be as wide as the requirements and conditions permit. The plantings of shrubs are so arranged as to break up the corners and boundaries as well as to harmonize the school building with its surroundings. Note the unity of the plantings about the building. Each one seems to be a part of the whole planting rather than a separate bed.

Number 3. Design of School Grounds.

The designing of the school grounds on a corner lot in a large town. Our increasing necessity for larger grounds is becoming more imperative each year. We are enlarging our school buildings to accommodate the larger attendance but failing to enlarge our grounds surrounding them. With the development of the school building as a social center in town life and the increasing demand for school gardens, larger school grounds are becoming imperative. Children's play grounds are also becoming essential in most of our large towns and where is there a more appropriate location for such than in conjunction with the school grounds where the play may be most carefully supervised by the teachers. The plan also shows the suggested design of the school gardens. The shelter adjoining the garden may be so designed as to be both ornamental and useful. As entered from the girl's lawn, it might prove a very pleasant place for kindergarten or other outdoor classes and very convenient to assemble a class in gardening for their instructions. It might also be so constructed as to serve a very convenient place for the storing of tools and other garden accessories. In designing the gardens, the first two rows of beds are designed larger than the others to serve

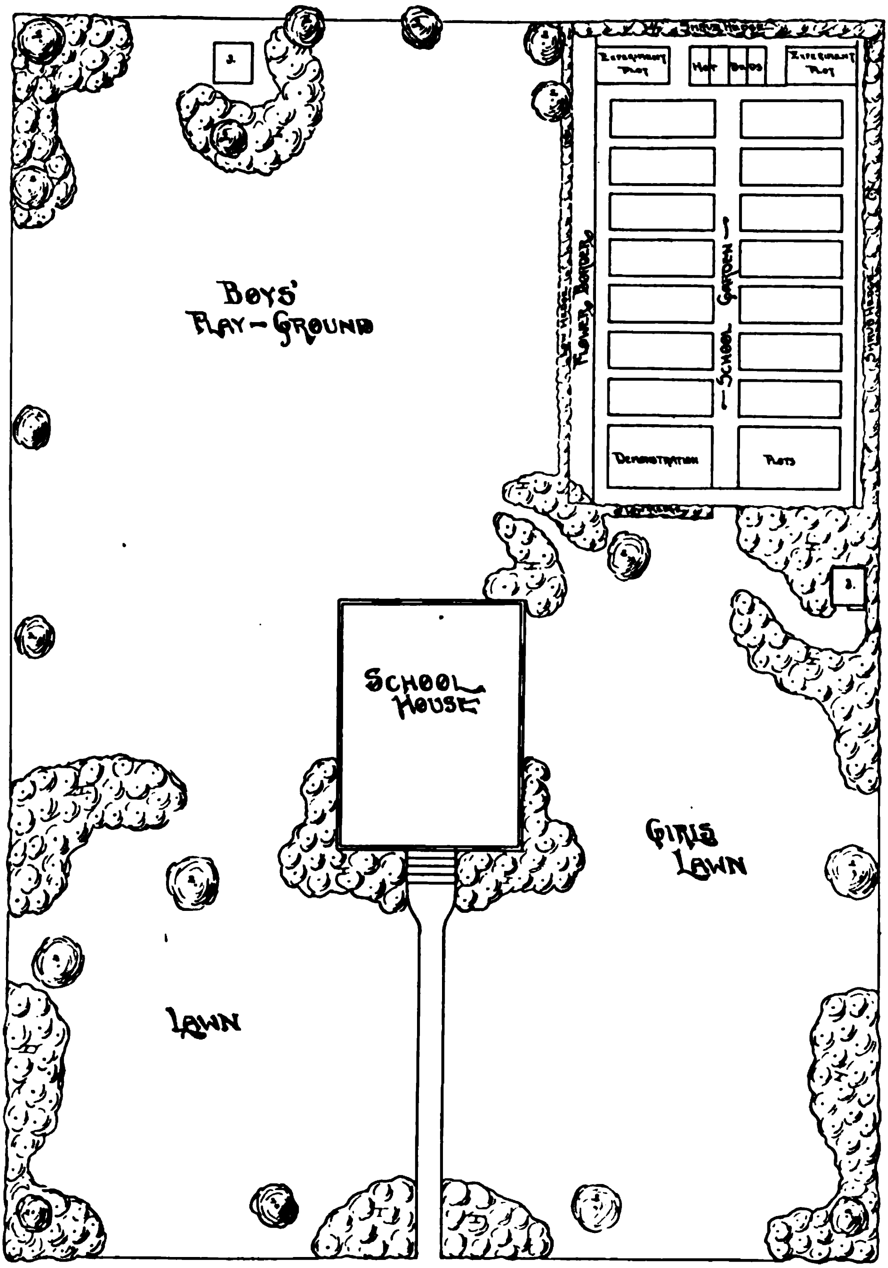

Shrub Hedge
Experiment Plot
Hot Beds
Experiment Plot
Flower Border
Shrub Hedge
— School Garden —
Shrub Hedge
Demonstration
Plots
Boys' Play-Ground
School House
Girls Lawn
Lawn
Street

PLATE I.

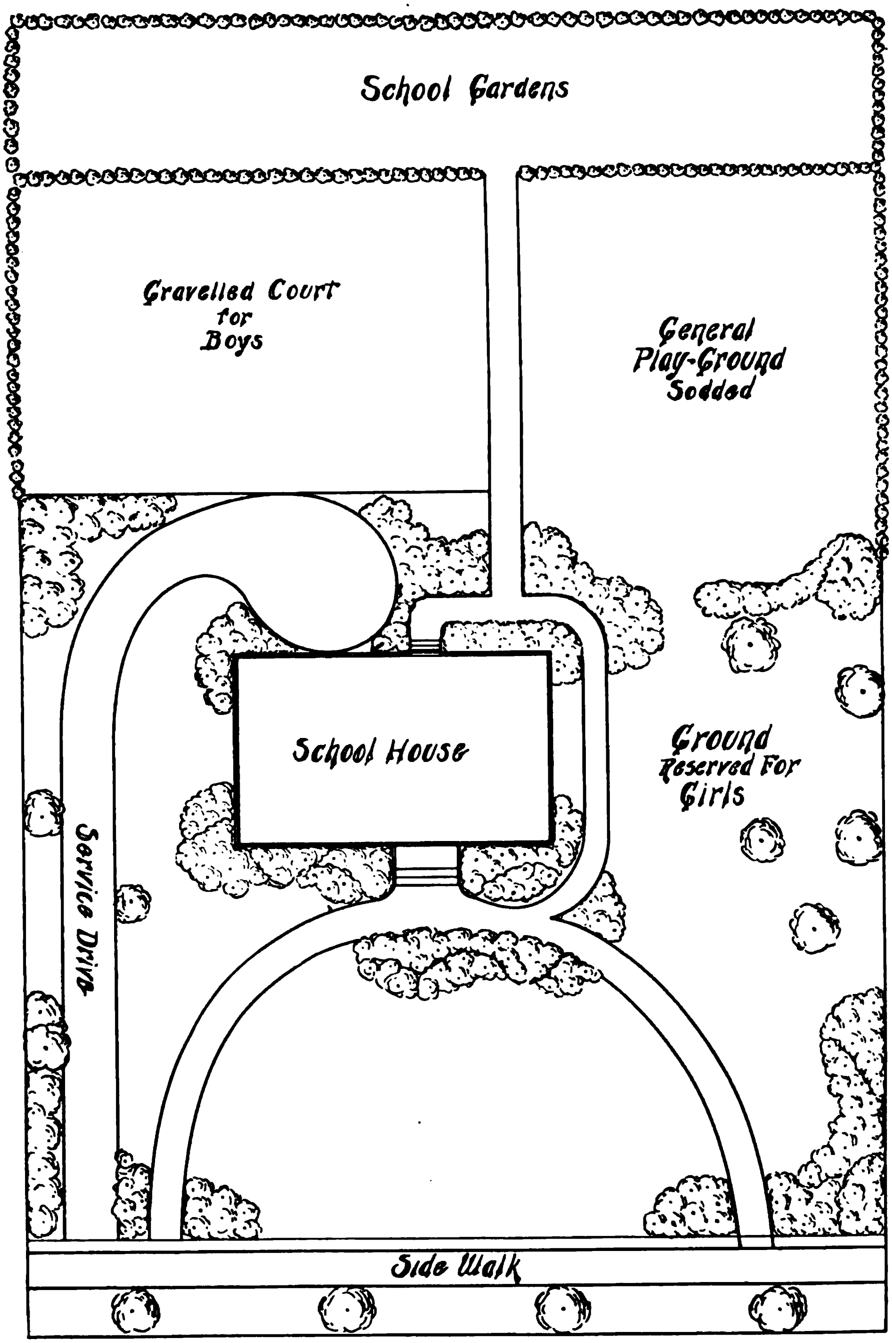

School Gardens
Gravelled Court for Boys
General Play-Ground Sodded
School House
Ground Reserved For Girls
Service Drive
Side Walk

PLATE II.

as demonstration plats. The length and width of the school garden beds will depend much upon the land available and the age of the children to use the garden. Whereas beds two to four feet wide are most suitable for the smallest children, the higher grades should have plots eight to ten feet wide except, of course, for flower gardens which should preferably be placed along the borders as shown in the design. A hot bed or cold frame is quite an essential accessory, while a few novelty plots help to maintain the interest, as well as proving quite instructive, in growing plants and crops not commonly seen in the locality.

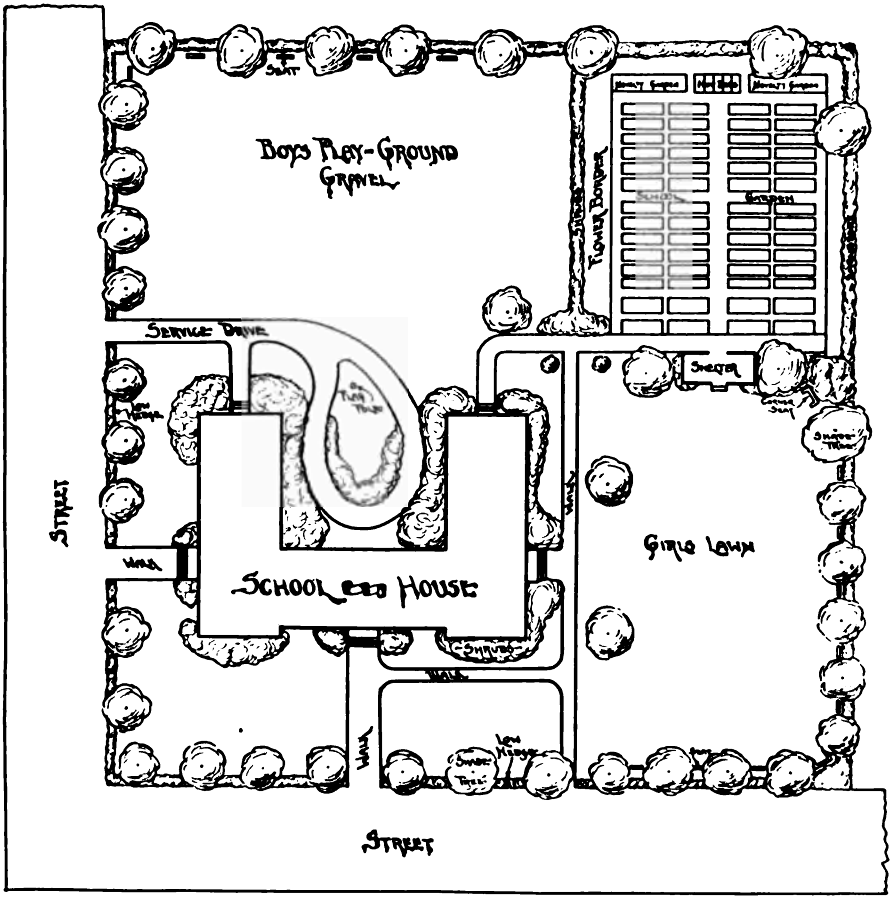


PLATE III.

The play grounds are well shaded with trees and surrounded by shrubbery hedges from the adjoining property. Seats are scattered around the border of the play grounds and a low shrubbery hedge is shown along the border of the property adjacent to the sidewalk.

DIRECTIONS FOR PLANTING TREES AND SHRUBS

BY PROF. C. P. HALLIGAN, M. A. C.

Trees and shrubs should be planted in early spring as soon as the soil is dry enough to work. They should never be planted when the soil is wet nor when the soil is very dry.

In the transplanting of trees the hole should be dug to such a depth and size that the roots of the plants may be allowed to grow out in their natural directions without the necessity of crowding, bending or pruning the roots. It is hardly advisable to dig the hole for any considerable time before planting as freshly turned soil is more desirable. One must be careful in digging to keep the top soil in one pile and the sub-soil in a separate one.

In the handling of plants during transplanting, the roots should be kept moist and protected from the sun and winds. This drying of the roots by exposure to sun and winds is a frequent cause of failure in transplanting. Keep the roots of plants covered with soil or in a pail of water until ready for planting.

Trees and shrubs should be planted a little deeper than they had formerly been in the nursery or fields. After the soil has been well settled around the plants, this will make them at about the same depth as before. Unless the soil is apt to be poorly drained there is generally more of a tendency to plant too shallow than too deep. The plant should be placed in the center of the hole with the roots well spread and some of the finest of the top soil may then be shoveled in and packed firmly around the roots and under the crown of the plant. If the soil is not too wet, there is little danger of packing it too tight as this drives out all the air spaces from around the roots, bringing the soil in direct contact with them. This insures plenty of moisture for the roots by the capillary action of the soil. More top soil may then be shoveled in and firmly packed until the hole is well filled. The sub-soil may be used if necessary on top and the last few inches may be left loose to act as a soil mulch and thus prevent the escape of the soil moisture.

Commercial fertilizers or barnyard manure should never be so used as to come in direct contact with the roots. If commercial fertilizer is to be used, it is better to spread it on top and rake it in only to a depth of an inch or two. Barnyard manure may be spread on top and this will also act as a soil mulch. It should never, however, be used in the bottom of the hole or around the roots.

When the soil is very dry at the time of planting, the trees may be watered by applying after the planting is finished. If watered before the hole is filled with soil, it will be too wet to permit of further handling. After planting, the soil around the trees should be kept well mulched by cultivating the same at least every two weeks during the growing season or by covering with a heavy coat of straw.

ORNAMENTAL TREES AND SHRUBS

The following is a list of ornamental trees that are believed to be safe to plant almost anywhere in the southern peninsula.

BROAD-LEAVED TREES

Acer plantanoides L. Norway Maple.
Acer rubrum L. Red Maple.
Acer saccharinum Wieri Schw. Wier's Cut-leaved Maple.
Acer Saccharum Marsh. Sugar Maple.
Betula alba laciniata pendula Hort. Cut-leaved Weeping Birch.
Betula papyrifera Marsh. Canoe Birch.
Cladrastris lutea Michx. Koch. Yellow Wood.
Cornus florida L. Flowering Dogwood.
Fagus Americana Sweet. Beech.
Fraxinus Americana L. White Ash.
Fraxinus lanceolata Borck. Green Ash.
Liriodendron Tulipifera L. Tulip Tree.
Magnolia acuminata L. Cucumber Tree.
Quercus alba L. White Oak.
Quercus coccinca Wang. Scarlet Oak.
Quercus imbricaria Michx. Shingle Oak.
Quercus palustris Muench. Pin Oak.
Quercus rubra L. Red Oak.
Salix vitellina pendula Hort. Weeping Willow.
Salix pentandra L. Laurel-leaved Willow.
Tilia Americana L. Basswood.
Ulmus Americana L. American Elm.

EVERGREEN TREES.

Juniperus Virginiana L. Red Cedar.
Picea Canadensis Mill. B. S. P. White Spruce.
Picea excelsa Link. Norway Spruce.
Picea orientalis Carr. Oriental Spruce.
Picea pungens Engelm. Colorado Blue Spruce.
Pinus Cembra L. Cembrian Pine.
Pinus resinosa Ait. Red or Norway Pine.
Pinus strobus L. White Pine.
Pseudotsuga Douglasii Carr. Douglass Spruce.
Thuya occidentalis L. Arbor Vitae. White Cedar.
Tsuga Canadensis L. Carr. Hemlock.

FOR THE UPPER PENINSULA

Trees.

White Elm
Soft Maple
Sugar Maple
Norway Maple
Wier's Cut-leaved Maple
Basswood
Wisconsin Willow
Laurel-leaved Willow

All varieties of evergreens.

Shrubs

Tartarian Honeysuckle
Rosa Rugosa
Spirea Von Houttei
Spirea Aurea
Jacqueminot Rose

EDUCATIONAL FUNDS

AND REPORT OF

UNIVERSITY OF MICHIGAN

EDUCATIONAL FUNDS

PRIMARY SCHOOL FUNDS

Seven per cent fund:		
Amount on which the State pays interest June 30, 1912	$4,302,968 10	
Due from purchasers of land, June 30, 1912	24,693 82	
Total seven per cent fund June 30, 1912		$4,327,661 92
Five per cent fund:		
Amount on which State pays interest, June 30, 1912		980,558 53
Due from purchasers of land, June 30, 1912		3,070 66
Total school fund June 30, 1912		$5,311,291 11

INCOME ON PRIMARY SCHOOL INTEREST FUND

Interest paid by State on seven per cent fund during year ending June 30, 1912	$301,207 77	
Interest and penalty paid by holders of land on seven per cent fund during the year ending June 30, 1912	2,050 47	
Interest paid by State on five per cent fund	49,027 93	
Total income from both funds		$352,286 17

UNIVERSITY FUND

Amount on which State pays interest June 30, 1912	$546,579 40	
Due from purchasers of land, June 30, 1912		$2,405 00
Interest paid by State (on land grant)		38,517 58
Interest paid by State on deposit		50 00
Interest and penalty paid by holders of land		186 81
Total income for year ending June 30, 1912		$41,159 39

AGRICULTURAL COLLEGE

Amount on which State pays interest June 30, 1912	$989,603 86	
Due from purchasers of land, June 30, 1912		$14,279 23
Interest paid by State		70,265 32
Interest and penalty paid by holders of land		1,115 51
Received from United States government		50,000 00
Total income for year ending June 30, 1912		$135,660 06

NORMAL SCHOOL FUND

Amount on which State pays interest June 30, 1912	$69,246 04	
Due from purchasers of land, June 30, 1912		$120 00
Interest paid by State		3,116 07
Interest and penalty paid by holders of lands		8 40
Total income for year ending June 30, 1912		$3,244 47

UNIVERSITY OF MICHIGAN

FINANCIAL STATEMENT OF THE UNIVERSITY OF MICHIGAN FOR THE FISCAL YEAR ENDING JUNE 30, 1912.

CONDENSED STATEMENT GENERAL, SPECIAL AND BUILDING FUNDS

	Receipts.	Disbursements.
Balance July 1, 1911	$117,644 07	
State Treasurer:		
⅜ Mill Tax, General Fund	730,657 50	
University Interest Fund	38,517 58	
Special Appropriations	46,000 00	
Building Fund	9,081 14	
Students' Fees and Miscellaneous Sources:		
General Fund	517,696 18	
General Fund		$1,317,228 97
Special Appropriations		20,676 42
Building Fund		8,289 12
Balance June 30, 1912		113,401 96
	$1,459,596 47	$1,459,596 47

DETAILED STATEMENT GENERAL FUND

	Student fees.	Receipts.	Disbursements.	Refunds.
Balance July 1, 1911		$123,726 34		
State Treasurer, ⅜ Mill Tax		730,657 50		
State Treasurer, University Interest		38,517 58		
Student Fees (Departmental):				
Literary Department	$92,525 00			$2,412 00
Engineering Department	74,366 00			2,261 00
Medical Department	10,610 00			386 50
Law Department	53,087 00			2,133 00
Dental Department	17,109 00			380 00
Homoeopathic Medical College	5,369 00			114 00
Pharmacy Department	4,995 00			340 00
Combined Courses	1,735 00			
Graduate School	7,076 00			141 00
Summer School Literary	9,790 00			180 00
Summer School Engineering	5,700 00			40 00
Summer School Medical	2,105 00			30 00
Summer School Law	3,805 00			75 00
Summer School Homoeopathic Medical College	40 00			
Summer School Graduate	2,830 00			100 00
Summer School Pharmacy	240 00			
Summer School Biological Station	754 00			
		292,136 00		
Student Fees (Laboratories):				
Barbour Gymnasium	$644 00			10 00
Botanical Laboratory	1,636 00			51 00
Chemical Laboratory	24,000 00			3,788 96
Camp Fees	430 00			10 00
Diploma	11,420 00			210 00
Dental	2,350 00			40 00
Drawing Board	450 00			382 50
Demonstration Courses	1,980 00			20 00
Electrical Engineering	1,661 00			88 00
Hygiene	4,425 00			541 42
Histology	1,389 00			91 50
Key Deposits	979 00			867 00
Mechanical	5,235 00			115 00

	Student fees.	Receipts.	Disbursements.	Refunds.
Mineralogy	$418 00			$22 00
Practical Anatomy	2,527 00			42 00
Pathology	950 00			394 00
Physiology	307 50			18 62
Pharmacology	252 00			6 07
Political Economy	120 00			3 00
Surveying	190 50			173 40
Thesis	600 00			500 00
Teachers' Diplomas	256 00			2 00
Waterman Gymnasium	3,164 00			16 00
Zoology	1,345 00			32 00
Osteology	375 00			222 25
Rhetoric	140 00			
Change of election	40 00			2 00
Solid Geometry	400 00			
Economics—Tickets	471 00			
Latin	440 00			10 00
Special Physics	430 00			20 00
Delayed Registration	110 00			5 00
Delayed Election	138 00			4 00
Special Examination	40 00			
Engineering Key Tickets	89 00			93 00
Palmer Field	384 00			2 00
Summer Barbour Gymnasium	97 00			2 00
Summer Waterman Gymnasium	83 50			1 00
		$69,966 50		
Miscellaneous Sources:				
Contingent	$3,508 74			
Dental Supplies	9,596 62			
Engineering Shops	1,256 38			
Fuel	1,498 89			
Interest	2,329 95			
Laundry	738 55			
Lights	349 99			
Printing Plant	160 60			
Pasteur Institute	2,100 00			
Real Estate	1,163 35			
Water Analysis	350 00			
Repairs	536 54			
Electrical Supplies	38 52			
General Catalogue	158 00			
Hinsdale History	52 00			
Engineering Pay Roll	105 00			
Chemical Laboratory	520 78			
Postage	18 87			
Commencement	488 25			
Store Room	66 97			
University Hospital Pay Roll	19 89			
University Extension	55			
Hygiene	75 34			
Care of Teams	811 04			
General Pay Roll	8 71			
Anatomical Material	61 31			
Janitor's Pay Roll	120 00			
Economics Pt. Fund	50 25			
Buildings and Grounds	26 92			
Buildings and Grounds Pay Roll	8 88			
General Library	39 11			
Painter's Supplies	106 08			
General Library Contingent	3 00			
Mechanical Engineering	1 04			
Carpenter Shops	60 18			
Botanical Garden	35 00			
Marine	75 00			
Mason's Supplies	10 40			
Homoeopathic Hospital Pay Roll	5 85			
Dental Pay Roll	25 00			
Law Pay Roll	25 30			
Architecture	8 00			
Literary Pay Roll	30 00			
Chemical Pay Roll	113 70			
Homoeopathic College	20 00			
Voucher Check Books	80 00			1 65
Summer School Pay Roll	96 00			
University Hospital	95,571 77			
Homoeopathic Hospital	33,067 36			
		155,593 68		
Pay Rolls:				
Literary Department	$268,136 33			
Engineering Department	168,929 57			
Medical Department	70,507 09			
Law Department	63,623 67			

UNIVERSITY OF MICHIGAN

FINANCIAL STATEMENT OF THE UNIVERSITY OF MICHIGAN FOR THE FISCAL YEAR ENDING JUNE 30, 1912.

CONDENSED STATEMENT GENERAL, SPECIAL AND BUILDING FUNDS

	Receipts.	Disbursements.
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DETAILED STATEMENT GENERAL FUND

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Medical Department	10,610 00			386 50
Law Department	53,087 00			2,133 00
Dental Department	17,109 00			380 00
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Pharmacy Department	4,995 00			340 00
Combined Courses	1,735 00			
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Summer School Literary	9,790 00			180 00
Summer School Engineering	5,700 00			40 00
Summer School Medical	2,105 00			30 00
Summer School Law	3,805 00			75 00
Summer School Homoeopathic Medical College	40 00			
Summer School Graduate	2,830 00			100 00
Summer School Pharmacy	240 00			
Summer School Biological Station	754 00			
		292,136 00		
Student Fees (Laboratories):				
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Botanical Laboratory	1,636 00			51 00
Chemical Laboratory	24,000 00			3,788 96
Camp Fees	430 00			10 00
Diploma	11,420 00			210 00
Dental	2,350 00			40 00
Drawing Board	450 00			382 50
Demonstration Courses	1,980 00			20 00
Electrical Engineering	1,661 00			88 00
Hygiene	4,425 00			541 42
Histology	1,389 00			91 50
Key Deposits	979 00			867 00
Mechanical	5,235 00			115 00

	Student fees.	Receipts.	Disbursements.	Refunds.
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Practical Anatomy	2,527 00			42 00
Pathology	950 00			394 00
Physiology	307 50			18 62
Pharmacology	252 00			6 07
Political Economy	120 00			3 00
Surveying	190 50			173 40
Thesis	600 00			500 00
Teachers' Diplomas	256 00			2 00
Waterman Gymnasium	3,164 00			16 00
Zoology	1,345 00			32 00
Osteology	375 00			222 25
Rhetoric	140 00			
Change of election	40 00			2 00
Solid Geometry	400 00			
Economics—Tickets	471 00			
Latin	440 00			10 00
Special Physics	430 00			20 00
Delayed Registration	110 00			5 00
Delayed Election	138 00			4 00
Special Examination	40 00			
Engineering Key Tickets	89 00			93 00
Palmer Field	384 00			2 00
Summer Barbour Gymnasium	97 00			2 00
Summer Waterman Gymnasium	83 50			1 00
		$69,966 50		
Miscellaneous Sources:				
Contingent	$3,508 74			
Dental Supplies	9,596 62			
Engineering Shops	1,256 38			
Fuel	1,498 89			
Interest	2,329 95			
Laundry	738 55			
Lights	349 99			
Printing Plant	160 60			
Pasteur Institute	2,100 00			
Real Estate	1,163 35			
Water Analysis	350 00			
Repairs	536 54			
Electrical Supplies	38 52			
General Catalogue	158 00			
Hinsdale History	52 00			
Engineering Pav Roll	105 00			
Chemical Laboratory	520 78			
Postage	18 87			
Commencement	488 25			
Store Room	66 97			
University Hospital Pay Roll	19 89			
University Extension	55			
Hygiene	75 34			
Care of Teams	811 04			
General Pay Roll	8 71			
Anatomical Material	61 31			
Janitor's Pay Roll	120 00			
Economics Pt. Fund	50 25			
Buildings and Grounds	26 92			
Buildings and Grounds Pay Roll	8 88			
General Library	39 11			
Painter's Supplies	106 08			
General Library Contingent	3 00			
Mechanical Engineering	1 04			
Carpenter Shops	60 18			
Botanical Garden	35 00			
Marine	75 00			
Mason's Supplies	10 40			
Homoeopathic Hospital Pay Roll	5 85			
Dental Pay Roll	25 00			
Law Pay Roll	25 30			
Architecture	8 00			
Literary Pay Roll	30 00			
Chemical Pay Roll	113 70			
Homoeopathic College	20 00			
Voucher Check Books	80 00			1 65
Summer School Pay Roll	96 00			
University Hospital	95,571 77			
Homoeopathic Hospital	33,067 36			
		155,593 68		
Pay Rolls.				
Literary Department	$268,136 33			
Engineering Department	168,929 57			
Medical Department	70,507 09			
Law Department	63,623 67			

	Student fees.	Receipts.	Disbursements.	Refunds.
Chemical Department	$34,620 16			
Homoeopathic Department	9,685 96			
Pharmacy Department	7,192 16			
Dental Department	17,708 65			
Library Department	26,126 81			
General Department	80,734 36			
Graduate Fellowship	2,910 00			
University Hospital	34,070 15			
Homoeopathic Hospital	12,185 46			
Buildings and Grounds	52,341 82			
Botanical Garden	1,422 75			
Forestry	93 70			
Summer Camp	160 00			
Summer School	5,832 07			
Summer School Law	3,368 00			
Summer School Medical	3,302 50			
Summer School Library	28,125 10			
Summer School Engineering	9,362 00			
Janitors	16,870 00			
Printing Plant	1,649 65			
Biological Station	7 88			
			$918,965 84	
Miscellaneous			398,263 13	
Balance June 30, 1912			93,368 63	
		$1,410,597 60	$1,410,597 60	$16,379 87

Total Students' Fees: Departmental and Laboratories	$362,102 50
Less Refunds	16,378 22
Student Fees—Net	$345,724 28

Total Receipts from Miscellaneous Sources	$155,593 68
Less Refunds	1 65
Miscellaneous Receipts—Net	$155,592 03

DETAILED STATEMENT SPECIAL APPROPRIATIONS.

HOMOEOPATHIC MEDICAL COLLEGE.

	Receipts.	Disbursements.
Balance July 1, 1911	$1,847 73	
From State Treasurer	6,000 00	
From Miscellaneous Sources	30 00	
Paid Vouchers (Pay Roll)		$6,401 30
Balance June 30, 1912		1,476 43
	$7,877 73	$7,877 73

SUMMER HOSPITALS.

From State Treasurer	$3,000 00	
Paid Vouchers		$3,000 00
	$3,000 00	$3,000 00

HEATING, POWER AND LIGHTING PLANT.

From State Treasurer	$37,000 00	
Paid Vouchers		$11,275 12
Balance June 30, 1912		25,724 88
	$37,000 00	$37,000 00

PSYCHOPATHIC WARD

	Receipts.	Disbursements.
Balance overdrawn July 1, 1911		$9,464 63
Balance overdrawn June 30, 1912	$9,464 63	
	$9,464 63	$9,464 63

DETAILED STATEMENT BUILDING ACCOUNT

ACCUMULATION OF SAVINGS

Equipment of Observatory

	Receipts.	Disbursements.
Balance July 1, 1911	$3 95	
From State Treasurer	184 79	
Paid Vouchers		$188 74
	$188 74	$188 74

Equipment of Engineering Laboratory

Balance July 1, 1911	$85 22	
Paid Vouchers		$85 22
	$85 22	$85 22

New Dental Building

Balance July 1, 1911	$47 58	
Paid Vouchers		$47 58
	$47 58	$47 58

Addition to Observatory

Balance July 1, 1911	$404 06	
Paid Vouchers		$404 06
	$404 06	$404 06

Equipment New Dental Building

Balance July 1, 1911	$13 90	
Balance June 30, 1912		$13 90
	$13 90	$13 90

Addition to Engineering Building

Balance July 1, 1911	$214 03	
Paid Vouchers		$214 03
	$214 03	$214 03

Repairs to Old Chemical Laboratory

Balance July 1, 1911	$14 75	
From State Treasurer	678 85	
Paid Vouchers		$693 60
	$693 60	$693 60

Eye and Ear Ward.

	Receipts.	Disbursements.
Balance July 1, 1911	$177 81	
Paid Vouchers		$177 81
	$177 81	$177 81

Eye and Ear Corridor

Balance July 1, 1911	$439 75	
Paid Vouchers		$439 75
	$439 75	$439 75

Stack Equipment of General Library

Balance July 1, 1911	$133 58	
Paid Vouchers		$133 58
	$133 58	$133 58

Oven and Elevator

From State Treasurer	$4,625 00	
From other sources	62 50	
Paid Vouchers		$4,376 58
Balance June 30, 1912		310 92
	$4,687 50	$4,687 50

Storehouse and Shops

From State Treasurer	$3,500 00	
Paid Vouchers		$1,528 17
Balance June 30, 1912		1,971 83
	$3,500 00	$3,500 00

SPECIAL AND BUILDING FUNDS

SUMMARY OF BALANCES, JUNE 30, 1912

Psychopathic Ward Overdraft	$9,464 63	$9,464 63

Credit Balances

Homoeopathic Medical College	$1,476 43	
Equipment of New Dental Building	13 90	
Oven and elevator	310 92	
Heating, Power and Lighting Plant	25,724 88	
Storehouse and Shops	1,971 83	
Balance June 30, 1912		$20,033 33
	$29,497 96	$29,497 96
Pay Roll Homoeopathic College General Fund	$9,685 96	
Pay Roll Homoeopathic College Special Account	6,401 30	$16,087 26

PSYCHOPATHIC WARD

	Receipts.	Disbursements.
Balance overdrawn July 1, 1911		$9,464 63
Balance overdrawn June 30, 1912	$9,464 63	
	$9,464 63	$9,464 63

DETAILED STATEMENT BUILDING ACCOUNT

ACCUMULATION OF SAVINGS

Equipment of Observatory

	Receipts.	Disbursements.
Balance July 1, 1911	$3 95	
From State Treasurer	184 79	
Paid Vouchers		$188 74
	$188 74	$188 74

Equipment of Engineering Laboratory

Balance July 1, 1911	$85 22	
Paid Vouchers		$85 22
	$85 22	$85 22

New Dental Building

Balance July 1, 1911	$47 58	
Paid Vouchers		$47 58
	$47 58	$47 58

Addition to Observatory

Balance July 1, 1911	$404 06	
Paid Vouchers		$404 06
	$404 06	$404 06

Equipment New Dental Building

Balance July 1, 1911	$13 90	
Balance June 30, 1912		$13 90
	$13 90	$13 90

Addition to Engineering Building

Balance July 1, 1911	$214 03	
Paid Vouchers		$214 03
	$214 03	$214 03

Repairs to Old Chemical Laboratory

Balance July 1, 1911	$14 75	
From State Treasurer	678 85	
Paid Vouchers		$693 60
	$693 60	$693 60

Name.	Amount in fund July 1, '11.	Income.			Amount in fund June 30, '12.
		Interest or rentals.	Contributions.	Expenditures.	
Newton VanderVeer Loan Fund	$524 50	$3 87			$528 37
New Mexico Exploration			$250 00	$250 00	
Northern Peninsular Zoo Work			100 00	100 00	
Observatory Library Book Fund	11 91	74	10 00		22 65
Parthenon Frieze	36 01	1 67			37 68
Palmer Memorial Free Bed	15,494 18	697 45		574 97	15,616 66
Parke, Davis & Co	50 00	1 10			51 10
Peter White Fellowship American History	185 51	8 30			193 81
Peter White Classical Fellowship	11 32	24			11 56
Peter White Medical Library	35 65	1 22		12 50	24 37
Phillips Scholarship	2,009 20	144 63		151 55	2,002 28
Pittsburgh Alumni Scholarship	4 12				4 12
Philo Parson Fund	154 00	6 31			160 31
Prescott Memorial	14 42	62			15 04
Restoration Old Medical Building	260 50			260 50	
Saginaw Valley Alumni Scholarship Fund	297 38		20 00		317 38
Special Latin Fund	23 96	1 08			25 04
Students' Lecture Association	1,508 32	50 92			1,559 24
Seth Harrison Fund	30,733 77	1,382 63		1,720 00	30,396 40
Transportation Fund			1,500 00	930 55	569 45
Treadwell Free Bed	14 40	51 80		64 85	1 35
Tappan Memorial	3,780 49	225 00	2,131 00		6,136 49
University Hospital Trust Account	4,567 24		94,374 56	95,521 00	3,420 80
University Hospital Interest Account	34 91	319 46		192 21	162 16
Woodward Ave. Lease		1,250 04		1,250 04	
Warren Book Fund			100 00		100 00
Walker & Newcomb Expedition			450 00	400 00	50 00
Walter Crane Fund	121 09	4 46		50 00	75 55
*Walter Crane Fund Property Account	11,725 60	650 08			12,375 68
Warner Fund	5 90	25			6 15
Williams Professorship	5,836 43	264 09	25 00	50 00	6,075 52
*Williams Professorship Property Account	20,764 68	1,202 22			21,966 90
Woman's Gymnasium Peter White	117 27	5 30			122 57
Wm. Wilson Pharmacy Fund	93			93	
Woman's Professorship	17,412 18	792 23			18,204 41
Webster Scholarship	1,201 59	40 37			1,241 96
Total	$545,974 28	$17,485 38	$170,480 74	$211,751 87	$522,188 53

*The care of the Williams Professorship Property Account and the Walter Crane Property Account has been in the hands of Mr. George S. Field. A summary of the report of Mr. Field is an appendix to the present report. (See Appendix.)

INVESTMENT OF TRUST AND GIFT FUNDS

Mortgages	$110,100 00
Notes	5,165 77
Apartment House Property	5,123 11
Real Estate	6,380 78
Properties (Field)	14,593 92
Properties (Field)	21,966 90
Contracts	27,859 81
Banks and Trust Companies	183,463 74
Premium	2,000 00
Bonds	145,000 00
Sidewalk (Authorization)	534 50
	$522,188 53

APPENDIX A

WILLIAMS PROFESSORSHIP FUND (PROPERTY ACCOUNT)

This is in the hands of Mr. George S. Field for management, and the summary of his report from June 15, 1911, to June 15, 1912, is as follows:

Cash on hand June 12, 1912	$3,385 22	
Real Estate Mortgages	17,075 00	
Real Estate	1,506 68	
		$21,966 90

Contra.

Total amount in valuation on hand at last report, June 15, 1911	$20,764 68	
Net gain in valuation for year ending June 12, 1912	1,202 22	
		$21,966 90

APPENDIX B

WALTER CRANE FUND (PROPERTY ACCOUNT)

This is in the hands of Mr. George S. Field for management, and the summary of his report from June 15, 1911, to June 15, 1912, is as follows:

Cash on hand June 15, 1911	$666 06	
Land Contracts	13,927 86	
		$14,593 92

Contra.

Total amount in valuation on hand at last report, June 15, 1911	$17,077 95	
Less payments made by Field	3,400 00	
	$13,677 95	
Net gain in value for year ending June 12, 1912	915 97	$14,593 92
Subject to loan of		2,218 24
Total Walter Crane Property Account		$12,375 68

STATISTICAL TABLES

STATISTICAL TABLES

TABLE I.

Comparative summary of statistics for the years 1911-1912.

Items.	1911.	1912.	Increase.	Decrease.
Districts and Schools.				
Number of townships and cities reporting	1,323	1,329	6	...
Number of graded school districts	611	613	2	...
Number of ungraded school districts	6,750	6,749	...	1
Total	7,361	7,362	1	...
Number of township unit districts	151	166	15	...
School census of graded school districts	478,967	491,293	12,326	...
School census of ungraded school districts	304,813	304,130	...	683
Total	783,780	795,423	11,643	...
Enrollment in graded school districts	334,606	344,730	124	...
Enrollment in ungraded school districts	210,673	210,407	...	266
Total	545,279	555,137	...	142
Enrollment in graded school districts:				
Resident pupils	334,606	344,730	10,124	...
Non-resident pupils	15,269	16,343	1,074	...
Total	349,875	361,073	11,198	...
Enrollment in ungraded school districts.				
Resident pupils	210,673	210,407	...	266
Non-resident pupils	7,452	7,177	...	275
Total	218,125	217,584	...	541
Enrollment in all school districts:				
Resident pupils	545,279	555,137	9,858	...
Non-resident pupils	22,721	23,520	799	...
Total	568,000	578,657	10,657	...

TABLE I.—*Continued.*

Items.	1911.	1912.	Increase.	Decrease.
Enrollment in city school districts	274,917	282,686	7,769	....
Percentage of attendance for the State	74	76	2	....
Percentage of attendance in graded school districts	84	85	1	....
Number of districts reporting having maintained school.	7,291	7,276	....	15
Average duration of months in graded schools	9.4	9 4	....	....
Average duration of months in ungraded schools	8.4	8 5	.1	....
Average for the State	8.5	8 6	.1	....
Number of private and parochial schools reported	455	443	....	12
Number of men teachers in such schools	349	354	5	....
Number of women teachers in such schools	1,112	1,308	166	....
Estimated number of pupils attending such schools	64,104	68,391	4,287	....
Number of day schools for deaf in the State	14	13	....	1
Number of teachers employed in same	28	29	1	....
Number of pupils attending same	200	198	....	2
Number of county normal training classes in the State.	42	43	1	....
Number of teachers employed in same	137	66	....	71
Number of graduates	529	497	....	32
Number of Rural High Schools in State	2	2	....	....
Number of teachers employed in same	2	2	....	....
Number of pupils attending same	41	35	....	6
Number of County Agricultural Schools in State	1	2	1	....
Number of teachers employed in same	6	8	2	....
Number of pupils attending same	49	64	15	....
Teachers and their employment.				
Number of teachers necessary to supply graded schools.	9,948	10,297	349	....
Number of teachers necessary to supply ungraded schools	7,450	7,575	125	....
Total	17,398	17,872	474	....
Number of men teachers employed in graded schools	1,272	1,398	126	....
Number of men teachers employed in ungraded schools	1,289	1,310	21	....
Total	2,561	2,708	147	....

TABLE I.—*Continued.*

Items.	1911.	1912.	Increase.	Decrease.
Number of women teachers employed in graded schools	8,715	8,709	....	6
Number of women teachers employed in ungraded schools	6,926	7,407	481	....
Total	15,641	16,116	475	....
Whole number of different teachers employed in graded schools	9,987	10,107	120	....
Whole number of different teachers employed in ungraded schools	8,215	8,717	502	....
Total	18,202	18,824	622	....
Average number of months taught by men in graded schools	9.4	9.7	.3	....
Average number of months taught by men in ungraded schools	8.2	7.8	....	.4
General average	8.9	8.8	....	.1
Average number of months taught by women in graded schools	9.6	10.0	.4	....
Average number of months taught by women in ungraded schools	8.0	7.8	....	.2
General average	8.9	9.0	.1	....
Total wages of men teachers in graded schools	$1,276,727 67	$1,415,926 60	$139,198 93	....
Total wages of men teachers in ungraded schools	533,622 69	549,922 21	16,299 52	....
Total	$1,810,350 36	$1,965,848 81	$155,498 45	....
Total wages of women teachers in graded schools	$5,156,408 30	$5,525,810 89	$369,402 59	....
Total wages of women teachers in ungraded schools	2,340,135 65	2,460,666 97	120,531 32	....
Total	$7,496,543 95	$7,986,477 86	$489,933 91	....
Aggregate wages of all teachers in graded schools	$6,433,135 97	$6,941,737 49	$508,601 52	....
Aggregate wages of all teachers in ungraded schools	2,873,758 34	3,010,589 18	136,830 84	....
Total	$9,306,894 31	$9,952,326 67	$645,432 36	....
Aggregate wages of teachers in city school districts	$4,416,139 00	$4,819,396 68	$403,257 68	....
Average monthly wages of men teachers in graded schools	$106 53	$104 39	....	$2 14

TABLE I.—*Continued.*

Items.	1911.	1912.	Increase.	Decrease.
Average monthly wages of men teachers in ungraded schools	$49 92	$53 31	$3 39	
Average monthly wages of men teachers in all schools	$79 84	$82 33	$2 49	
Average monthly wages of women teachers in graded schools	$61 15	$63 07	$1 92	
Average monthly wages of women teachers in ungraded schools	41 99	42 69	70	
Average monthly wages of women teachers in all schools	$53 53	$54 97	$1 44	
Examination and certification of teachers.				
Number of public examinations held	213	*173		40
Number of applicants for regular certificates	9,114	*7,245		1,869
Number of county first grade certificates granted	43	56	13	
Number of indorsed first grade certificates granted	27	31	4	
Number of second grade certificates granted	1,934	*1,471		463
Number of third grade certificates granted	3,307	*2,856		451
Whole number of regular certificates granted	5,311	*4,414		897
Number of applicants for special certificates	765	594		171
Number of special certificates granted	632	519		113
Number holding certificates issued or indorsed by State Board of Education	846	866	20	
Number holding normal school certificates	2,260	2,963	703	
Number holding certificates issued by city boards of education	2,416	2,449	33	
Number holding county normal training class certificates	1,914	2,400	486	
Whole number of legally qualified teachers	19,065	19,996	931	
Number licensed without previous experience	1,660	1,590		70
Number of applicants who had attended State Normal	1,912	1,690		222
Number of applicants who had attended institutes during year	3,212	3,820	608	
School Property.				
Number of schoolhouses	8,649	8,668	19	
Number of schoolhouses to be built during year	98	121	23	
Cost of same	$1,054,679 50	$2,775,445 15	$1,720,765 65	
Estimated value of property in graded school districts	29,645,125 00	$32,431,660 00	$2,786,535 00	
Estimated value of property in ungraded school districts	7,056,200 00	7,792,087 00	735,887 00	
Total	$36,701,325 00	$40,223,747 00	$3,522,422 00	
Financial.				
Amount of one mill tax received	$962,474 29	$1,049,400 20	$86,925 91	
Amount of primary school interest fund received	6,093,810 25	†618,059 64		$5,475,750 61
Amount received from non-resident tuition	233,386 06	266,146 94	32,760 88	
Amount received from district taxes	7,151,553 46	7,418,292 31	266,738 85	
Amount received from all other sources	1,115,651 43	837,484 12		278,167 31
Total net receipts	$15,556,875 49	$10,189,383 21		$5,367,492 28

TABLE I.—*Continued.*

Items.	1911.	1912.	Increase.	Decrease.
Amount received from loans	$1,752,662 37	$4,359,244 34	$2,606,581 97	
Balance on hand from preceding year	6,787,356 48	7,281,819 51	494,463 03	
Total resources including amount on hand from preceding year	$24,096,894 34	$21,830,447 06		$2,266,447 28
Amount paid men teachers	$1,821,367 31	$1,963,694 39	$142,227 08	
Amount paid women teachers	7,506,562 95	7,980,024 99	473,462 04	
Amount paid on buildings and sites	2,103,114 58	2,199,021 46	95,906 88	
Amount paid for general purposes	3,649,928 39	4,353,778 26	703,849 87	
Amount paid for library purposes	211,578 73	233,850 98	22,272 25	
Total net expenditures	$15,292,551 96	$16,730,370 08	$1,437,818 12	
Amount paid on all indebtedness	$1,318,547 30	$1,400,106 47	$81,559 17	
Balance carried to next year	7,301,928 57	3,699,970 51		$3,601,958 06
Total expenditures including balance carried to next year	$23,913,027 83	$21,830,447 06		$2,082,580 77
Total expenditures in graded school districts	$11,351,113 46	$13,065,361 00	$1,714.247 54	
Total expenditures in ungraded school districts	3,941,438 50	3,665,009 08		$2,76429 42
Total net expenditures	$15,292,551 96	$16,730,370 08	$1,437,818 12	
Total bonded indebtedness of districts	$5,566,807 48	$6,697,682 82	$1,130,875 34	
Total floating indebtedness of districts	331,383 90	2,260,479 44	1,929,095 54	
Total indebtedness	$5,898,191 38	$8,958,162 26	$3,059,970 88	
Total indebtedness in graded school districts	$5,504,243 84	$8,305,055 44	$2,800,811 60	
Total indebtedness in ungraded school districts	393,947 54	653,106 82	259,159 28	
Total indebtedness	$5,898,191 38	$8,958,162 26	$3,059,970 88	
Total amount due the districts	$346,327 30	$866,897 56	$520,570 26	
Amount received from non-resident tuition in graded school districts	$221,308 43	$254,766 99	$33,458 56	
Amount received from non-resident tuition in ungraded school districts	12,077 63	11,379 95		$697 68
Total	$233,386 06	$266,146 94	$32,760 88	
Number of townships reporting libraries	338	327		11
Number of districts reporting libraries	5,766	5,750		16
Total number of libraries	6,104	6,077		27

TABLE I.—*Continued.*

Items.	1911.	1912.	Increase.	Decrease.
Number of volumes in township libraries	205,066	132,574	72,492	....
Number of volumes in district libraries	1,673,385	1,664,467	8,918	....
Total number of volumes in all libraries	1,878,451	1,797,041	81,410	....
Amount of taxes voted for township libraries	$8,889 56	$5,419 08	....	$3,470 48
Amount received from county treasurers for township libraries	8,913 02	3,722 33	....	5,190 69
Number of townships forfeiting library money	896	922	26	....
Amount paid for support of township libraries	$18,205 70	$11,861 51	....	$6,344 19
Amount paid for support of district libraries	211,578 73	233,850 98	$22,272 25	....
Teachers' Institutes.				
Number of State institutes held	156	147	....	9
Amount received from State treasurer for such institutes	$2,811 70	$1,800 97	....	$1,010 73
Amount received from county treasurers for such institutes	9,663 64	8,229 89	....	1,433 75
Total amount expended	$12,475 34	$10,030 86	....	$2,444 48
Miscellaneous.				
Number of counties reporting county teachers' associations	56	70	14	....
Amount per diem received by examiners	$20,156 89	$20,504 48	$347 59	....
Amount paid commissioners of schools	91,160 00	98,991 00	7,831 00	....
Total compensation	$111,316 89	$119,495 48	$8,178 59	....
Amount allowed by supervisors for expenses of county boards	$13,332 70	$15,587 68	$2,254 98	....
Amount paid and due inspectors for services	11,228 93	12,050 70	821 77	....
Amount paid chairmen of boards of inspectors	62,299 32	62,790 90	491 58	....
Total amount of primary school interest fund apportioned	$5,780,995 50	$5,514,802 90	....	$266,192 60
Rate per capita, May apportionment	$7 00	(July) $7 45	$0 45	....
Rate per capita, November apportionment	50	No apportionm't	....	$0 50
Rate per capita for year	$7 50	$7 45	....	$0 05

TABLE I.—*Concluded.*

Items.	1911.	1912.	Increase.	Decrease.
Number of eighth grade diplomas granted during year	7,143	8,128	985	....
Number of pupils in eighth grade exclusive of graded schools	15,717	17;667	1,950	....
Number of districts furnishing free textbooks	1,105	1,240	135	....
Number of districts reporting dictionaries in schools	7,188	7,520	333	....
Number of districts reporting globes in schools	6,561	7,007	446	....
Number of districts reporting maps in schools	6,869	7,185	316	....
Total number of U. S. flags with staff in school districts	7,236	7,327	91	....
Total number of children in the State, blind or with defective vision	329	314	....	15
Number of districts in which general tuition was paid	48	89	41	....
Amount of general tuition paid	$8,018 02	$6,900 21	....	$1,117 81
Amount of eighth grade tuition paid	175,848 49	192,753 75	$16,904 26	....

*October examination abolished.

†Only one apportionment made from July, 1911, to July, 1912.

TABLE II.

Fifty-fourth annual apportionment of the primary school interest fund.

Counties.	Apportionment made July 15, 1912, rate per capita, $7.45.			
	Whole number of children.	Number of children included in apportionment.		Amount apportioned.
Totals	783,770	740,242		$5,514,802 90
Alcona	1,978	1,720		$12,814 00
Alger	1,931	1,931		14,385 95
Allegan	11,665	10,565	*a*	78,671 75
Alpena	6,536	6,258		46,622 10
Antrim	4,379	4,202		31,304 90
Arenac	3.647	2,718		20,249 10
Baraga	2,314	2,314		17,239 30
Barry	5,935	5,935		44,215 75
Bay	21,458	16,312		121,524 40
Benzie	3,370	3,362		25,046 90
Berrien	14,743	13,604		101,349 80
Branch	6,288	6,231		46,420 95
Calhoun	13,574	13,574		101,126 30
Cass	4,979	4,970		37,026 50
Charlevoix	5,904	5,901	*b*	44,314 95
Cheboygan	5,892	5,346		39,827 70
Chippewa	7,417	7,265		54,124 25
Clare	3,137	2,972		22,141 40
Clinton	6,337	5,778	*c*	43,083 60
Crawford	1,193	1,179		8,783 55
Delta	9,856	9,794		72,965 30
Dickinson	7,081	7,081		52,753 45
Eaton	7,070	7,070		52,671 50
Emmet	5,672	5,236		39,008 20
Genesee	13,707	13,707		102,117 15
Gladwin	3,162	2,623		19,541 35
Gogebic	7,516	7,516		55,994 20
Grand Traverse	6,282	6,194		46,145 30
Gratiot	8,428	8,093		60,292 85
Hillsdale	7,626	7,626		56,813 70
Houghton	27,672	27,664		206,096 80
Huron	12,037	9,046		67,392 70
Ingham	11,909	11,909		88,722 05
Ionia	7,785	7,655		57,029 75
Iosco	3,339	2,924		21,783 80
Iron	4,315	4,307		32,087 15
Isabella	6,958	5,849		43,575 05
Jackson	12,502	12,332		91,873 40
Kalamazoo	14,562	14,562		108,486 90
Kalkaska	2,266	2,266		16,881 70
Kent	42,694	41,701		310,672 45
Keweenaw	2,173	2,173		16,188 85
Lake	1,645	1,565		11,659 25
Lapeer	6,899	6,479		48,268 55
Leelanau	3,473	2,863		21,329 35
Lenawee	11,652	11,381		84,788 45
Livingston	4,497	4,497		33,502 65
Luce	1,033	1,033		7,695 85
Mackinac	2,696	2,696		20,085 20
Macomb	9,586	7,153		53,289 85
Manistee	8,962	7,836		58,378 20
Marquette	14,997	14,997		111,727 65
Mason	6,959	6,589		49,088 05
Mecosta	5,924	5,428		40,438 60
Menominee	9,304	8,646		64,412 70

TABLE II.—*Concluded.*

Counties.	Apportionment made July 15, 1912, rate per capita, $7.45.		
	Whole number of children.	Number of children included in apportionment.	Amount apportioned.
Midland	4,916	4,255	$31,699 75
Missaukee	3,579	3,346	24,927 70
Monroe	9,901	9,088	67,705 60
Montcalm	9,217	8,432	62,818 40
Montmorency	1,117	1,048	7,807 60
Muskegon	11,972	11,339	84,475 55
Newaygo	6,220	5,880	43,806 00
Oakland	11,968	11,799	87,902 55
Oceana	5,647	5,306	39,529 70
Ogemaw	3,122	2,245	16,725 25
Ontonagon	2,754	2,754	20,517 30
Osceola	5,551	5,294	39,440 30
Oscoda	675	635	4,730 75
Otsego	2,225	2,041	15,205 45
Ottawa	14,167	13,604	101,349 80
Presque Isle	3,821	2,652	19,757 40
Roscommon	699	696	5,185 20
Saginaw	27,068	22,588	168,280 60
St. Clair	14,845	13,644	101,647 80
St. Joseph	6,192	6,192	46,130 40
Sanilac	11,014	10,005	74,537 25
Schoolcraft	2,685	2,685	20,003 25
Shiawassee	8,475	8,404	62,609 80
Tuscola	10,441	8,248	61,447 60
Van Buren	9,142	8,871	66,008 95
Washtenaw	11,631	11,413	85,026 85
Wayne	133,561	131,116	976,814 20
Wexford	6,259	6,034	44,953 30

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a Less amount overpaid district 2 fr. Clyde, May, 1911, $37.50.
b Includes deficiency to 8 Boyne Valley, May and November, 1911, $352.50.
c Includes deficiency to 9 fr. Victor, May and November, 1911, $37.50.

TABLE III.

General school statistics as reported by township clerks for the year ending July 8, 1912.

Counties.	Number of townships and cities reporting.	Whole number of school districts.	Number of districts that maintained school.	Number of graded school districts.	Number of township unit districts.	Number of children 5 years of age and under 20.	Number of children 5 years of age and under 20 that attended school during the year.	Whole number of days of school.	Percentage of attendance.	Number of schoolhouses.	Estimated value of school property.	Number of schoolhouses to be built during ensuing year.	Average number months of school.	Whole number of districts in which general tuition was paid.
Totals	1,329	7,362	7,276	613	166	795,423	555,137	1,265,246	76	8,668	$40,223,747 00	121	8.6	89
Alcona	11	38	42	1	3	2,084	1,557	6,762	66	43	$57,875 00	4	8.0	....
Alger	8	8	8	2	8	1,939	1,545	1,507	79	29	111,150 00	1	9.3	....
Allegan	24	185	184	16	0	11,578	8,540	31,487	75	196	414,130 00	....	8.5	1
Alpena	9	20	20	2	6	6,463	3,493	3,175	74	76	123,430 00	1	7.5	....
Antrim	15	72	72	6	0	4,289	3,495	12,254	71	78	424,411 00	1	8.5	....
Arenac	11	43	43	7	0	3,630	2,665	7,659	75	45	88,150 00	....	8.8	....
Baraga	5	5	5	2	5	2,305	1,611	960	76	31	147,578 00	2	9.6	....
Barry	17	142	141	5	....	5,867	4,575	23,942	83	145	224,610 00	....	8.4	....
Bay	15	71	70	5	1	21,423	12,085	12,517	70	93	826,701 00	....	8.9	....
Benzie	12	53	52	6	0	3,357	2,792	8,438	75	57	101,998 00	....	8.0	1
Berrien	23	147	146	20	0	14,973	10,837	24,183	79	160	772,601 00	2	8.2	1
Branch	17	127	126	5	0	6,286	4,856	21,756	79	131	335,385 00	....	8.6	....
Calhoun	23	165	163	8	0	13,960	10,747	28,467	86	185	1,271,646 00	2	8.7	2
Cass	16	112	110	5	0	5,065	4,008	18,865	80	114	266,150 00	....	8.5	3
Charlevoix	15	69	68	5	....	5,859	4,536	11,126	75	77	238,429 00	2	8.1	2
Cheboygan	20	59	59	3	4	5,807	4,138	9,753	73	84	224,025 00	....	8.2	....
Chippewa	15	49	49	3	9	7,745	5,516	8,817	71	90	335,205 00	2	8.9	....
Clare	18	71	70	4	0	3,077	2,376	11,208	72	71	98,715 00	1	8.0	....
Clinton	17	129	127	8	0	6,365	4,385	22,300	76	131	240,080 00	....	8.8	4
Crawford	6	25	24	1	0	1,149	1,003	3,215	72	24	39,659 00	1	6.6	1
Delta	15	21	21	4	11	9,682	6,776	4,547	78	82	677,000 00	5	10.0	3
Dickinson	9	9	9	4	7	7,060	5,560	1,727	88	44	268,800 00	1	9.5	....
Eaton	18	142	141	10	0	6,986	5,967	24,769	76	149	175,650 00	1	8.7	2
Emmet	16	73	73	5	0	5,611	3,765	11,953	74	78	486,098 00	1	8.1	....
Genesee	20	155	153	12	0	14,889	11,436	27,242	75	177	651,360 00	4	8.9	2

Gladwin	15	57	57	3	2	3,195	2,477	9,803	70	61	91,579 00	1	8.6	....
Gogebic	9	9	9	4	7	7,717	5,420	1,752	86	48	676,300 00	2	9.7	....
Grand Traverse	14	69	69	3	0	6.278	5.126	11,006	76	73	350,563 00	....	7.8	....
Gratiot	19	132	132	11	0	8,441	6,544	22,664	78	135	364,444 00	1	8.5	....
Hillsdale	19	163	159	14	0	7,798	5,928	28,026	81	171	368,475 00	....	8.8	5
Houghton	15	35	32	9	6	27,490	19,169	6,196	84	135	831,750 00	3	9.6	....
Huron	27	126	126	22	0	12,086	8,475	23,095	70	126	281,975 00	3	9.1	....
Ingham	19	137	133	12	0	12,265	8,843	23,385	84	154	673,590 00	2	8.7	4
Ionia	18	141	138	12	0	7,743	5,722	24,176	82	150	365,635 00	....	8.8	3
Iosco	13	34	34	7	1	3,044	2,173	5,898	72	38	102,250 00	3	8.3	....
Iron	7	7	7	4	7	4,687	3,807	1,387	84	41	433,300 00	5	9.8	....
Isabella	17	109	109	4	0	7,072	4,806	19,247	83	113	210,400 00	....	8.8	....
Jackson	20	153	152	9	0	12,711	8,831	26,927	81	172	672,950 00	1	8.8	3
Kalamazoo	17	128	125	9	0	14,897	10,642	21,649	79	138	1,058,774 00	2	7.1	3
Kalkaska	11	51	51	3	0	2,299	1,972	8,555	73	55	90,950 00	....	8.3	....
Kent	25	205	202	19	0	43,000	25,958	35,928	73	240	2,324,160 00	2	8.8	3
Keweenaw	5	5	5	....	4	2,256	1,713	911	91	15	61,900 00	1	9.0	....
Lake	12	50	49	3	0	1,663	1,239	7,127	76	48	66,386 00	1	7.2	1
Lapeer	19	134	134	12	0	6,808	5,491	24,076	76	135	209,900 00	1	8.9	....
Leelanau	11	59	59	3	0	3,507	2,385	9,631	68	61	89,100 00	....	8.1	....
Lenawee	24	195	193	12	0	11,711	8,721	34,249	80	208	646,250 00	1	8.3	2
Livingston	16	134	132	4	0	4,467	3,413	23,150	75	137	190,200 00	1	8.6	2
Luce	4	4	4	1	4	1,126	962	728	84	17	104,500 00	......	9.0	1
Mackinac	14	14	14	2	12	2,689	1,989	2,388	69	60	78,050 00	2	8.5	....
Macomb	16	113	112	14	0	9,630	5,808	20,305	71	123	426,500 00	2	9.0	1
Manistee	15	71	71	6	0	8,917	5,283	11,855	72	76	272,183 00	....	8.3	....
Marquette	21	21	21	8	18	15,312	10,253	3,976	79	92	1,136,995 00	1	9.4	....
Mason	16	68	67	4	0	6,972	4,834	11,499	78	78	386,825 00	1	8.5	2
Mecosta	17	111	110	7	0	5,932	4,383	18,584	77	113	221,950 00	2	8.4	2
Menominee	12	43	43	3	7	9,413	6,445	7,662	79	101	332,055 00	2	8.9	2
Midland	17	84	83	4	0	5,077	3,812	13,921	74	87	136,025 00	....	8.3	2
Missaukee	14	65	64	5	0	3,581	2,707	10,502	74	68	111,170 00	1	8.1	2
Monroe	16	139	139	5	0	9.685	6,237	24,226	78	145	394,000 00	2	8.7	....
Montcalm	22	142	135	13	0	9,161	6,879	24,600	77	143	284,200 00	1	8.8	1
Montmorency	7	9	9	2	6	1,124	743	1,480	77	32	43,500 00	1	8.2	....
Muskegon	20	92	91	9	0	12,044	8,437	15,416	78	116	1,010,271 00	2	8.4	....
Newaygo	24	127	124	5	0	6,170	4,706	19,871	76	127	183,419.00	2	8.0	3
Oakland	26	201	196	14	0	12,171	9,407	35,029	78	213	667,463 00	2	8.8	5
Oceana	16	95	93	5	0	5,628	4.314	15,603	75	95	188,135 00	....	8.3	....
Ogemaw	13	49	49	5	2	3,178	2,342	8,321	71	59	73,300 00	2	8.5	....
Ontonagon	10	10	10	5	10	3,013	2,484	1,842	84	55	144,335 00	3	9.2	....
Osceola	16	96	95	7	0	5,696	4,127	16,152	79	98	165,250 00	....	8.4	1
Oscoda	4	19	19	0	1	626	521	2,657	77	29	20,575 00	....	6.9	....
Otsego	9	37	35	4	1	2,129	1,642	5,724	72	40	76,350 00	2	8.1	....
Ottawa	17	125	124	24	0	14,249	10,277	22,243	80	136	621,535 00	3	8.0	1

TABLE III.—*Concluded.*

Counties.	Number of townships and cities reporting.	Whole number of school districts.	Number of districts that maintained school.	Number of graded school districts.	Number of township unit districts.	Number of children 5 years of age and under 20.	Number of children 5 years of age and under 20 that attended school during the year.	Whole number of days of school.	Percentage of attendance.	Number of schoolhouses.	Estimated value of school property.	Number of schoolhouses to be built during ensuing year.	Average number months of school.	Whole number of districts in which general tuition was paid.
Presque Isle	14	35	35	3	5	3,857	2,360	6,002	66	50	$61,390 00	3	8.5	....
Roscommon	9	29	29	1	0	700	551	4,390	76	27	20,160 00	2	7.5	....
Saginaw	30	165	165	12	0	27,170	15,837	29,293	73	193	1,343,362 00	1	8.8	....
St. Clair	26	156	146	8	0	15,257	9,802	28,004	71	174	921,525 00	2	9.5	2
St. Joseph	18	123	123	8	0	6,189	4,729	20,922	82	128	379,600 00	....	8.5	3
Sanilac	28	159	157	23	0	10,927	8,659	28,662	65	159	332,275 00	4	9.1	2
Schoolcraft	10	10	10	2	9	2,666	1,848	1,915	75	34	110,700 00	....	9.5	1
Shiawassee	18	124	123	10	0	8,543	6,515	22,140	76	123	492,325 00	2	9.0	1
Tuscola	23	153	153	13	0	10,353	7,693	27,305	69	157	287,224 00	3	8.9	3
Van Buren	19	150	150	15	0	9,224	6,824	25,209	80	155	414,850 00	2	8.4	2
Washtenaw	22	166	161	8	0	11,520	7,818	28,358	80	174	811,060 00	....	8.8	3
Wayne	22	151	150	23	0	140,567	91,615	27,469	73	254	8,822,660 00	7	9.1	1
Wexford	17	83	83	7	....	6,343	5,175	13,530	78	88	386,353 00	3	8.1	....

TABLE IV.

Employment of teachers as reported by township clerks for the year ending July 8, 1912.

Counties.	Number of teachers required.		Number of different teachers employed.		Aggregate number of months taught.		Total wages of teachers.			Average monthly wages.	
	Graded schools.	Ungraded schools.	Men.	Women.	Men.	Women.	Men.	Women.	Total.	Men.	Women.
Totals	10,297	7,575	2,708	16,116	23,878	145,251	$1,965,948 81	$7,986,477 86	$9,952,326 67	$82 32	$54 09
Alcona	4	45	12	36	107	307	$5,975 50	$13,429 00	$19,404 50	$55 84	$43 74
Alger	29	25	10	51	86	424	7,110 00	25,461 38	32,571 38	82 67	60 05
Allegan	122	196	58	243	484	2,117	31,380 34	99,244 57	130,624 91	64 83	46 88
Alpena	61	68	10	121	98	1,067	9,015 00	50,600 19	59,615 19	91 99	47 42
Antrim	60	73	19	117	169	1,012	12,018 97	47,455 01	59,473 98	71 12	50 16
Arenac	28	44	14	61	139	501	8,390 62	23,623 00	32,013 62	60 36	47 15
Baraga	37	12	11	38	109	373	9,225 00	19,115 00	28,340 00	84 63	51 25
Barry	60	140	34	176	303	1,480	20,164 75	66,397 63	86,562 38	68 82	47 42
Bay	226	93	41	282	390	2,681	36,098 00	162,446 40	198,544 40	92 56	61 21
Benzie	46	48	18	82	150	664	10,446 25	30,597 06	41,043 31	69 64	46 08
Berrien	175	140	65	300	532	2,560	44,123 15	130,411 28	174,534 43	82 94	50 94
Branch	75	124	51	160	395	1,371	25,714 50	66,034 37	91,748 87	65 10	48 16
Calhoun	249	161	50	359	450	3,340	37,023 67	169,451 73	208,475 40	82 27	51 33
Cass	62	106	29	141	264	1,226	18,278 00	56,999 50	75,277 50	69 23	46 49
Charlevoix	87	67	18	145	156	1,209	13,053 11	63,156 47	76,209 58	83 67	52 23
Cheboygan	49	80	15	124	122	1,070	9,556 25	52,324 99	61,881 24	78 33	48 90
Chippewa	80	89	30	136	266	1,231	22,440 38	66,931 34	89,371 72	84 36	54 37
Clare	28	67	20	82	169	643	8,545 00	27,579 00	36,124 00	50 56	42 89
Clinton	66	121	33	167	263	1,442	18,212 58	66,007 75	84,220 33	69 24	45 77
Crawford	22	25	6	42	46	261	3,200 00	11,710 75	14,910 75	70 00	44 87
Delta	123	78	21	178	183	1,604	17,866 96	87,262 96	105,129 92	97 63	54 40
Dickinson	116	28	22	142	209	1,282	21,183 53	85,165 05	106,348 58	101 35	66 43
Eaton	117	128	36	213	301	1,850	22,299 74	88,256 68	110,556 42	74 08	47 70
Emmet	38	72	21	129	179	1,028	14,883 08	53,745 65	68,628 73	83 14	52 28
Genesee	214	146	48	332	402	3,081	30,581 05	154,851 12	185,432 17	76 07	50 26
Gladwin	16	60	15	71	117	540	5,836 50	22,878 00	28,714 50	49 88	42 37
Gogebic	152	34	22	173	220	1,715	22,154 00	103,486 99	125,640 99	100 70	60 34
Grand Traverse	68	77	30	126	248	1,086	18,972 60	54,988 34	73,960 94	76 50	50 63
Gratiot	86	126	48	182	390	1,523	26,285 37	72,270 53	98,555 90	67 42	47 45
Hillsdale	113	146	58	215	497	1,840	30,355 53	78,918 03	109,273 56	61 08	42 89

TABLE IV.—*Concluded.*

Counties.	Number of teachers required.		Number of different teachers employed.		Aggregate number of months taught.		Total wages of teachers.			Average monthly wages.	
	Graded schools.	Ungraded schools.	Men.	Women.	Men.	Women.	Men.	Women.	Total.	Men.	Women.
Houghton	529	91	68	600	646	5,570	$74,666 50	$336,975 04	$411,641 54	$115 58	$60 49
Huron	90	117	57	165	500	1,493	37,070 00	75,069 75	112,139 75	74 14	50 28
Ingham	182	124	45	294	408	2,583	30,780 28	137,995 65	168,775 93	75 44	23 10
Ionia	120	130	37	222	323	1,977	22,227 50	93,498 50	115,726 00	68 81	47 29
Iosco	44	31	9	60	92	607	5,495 50	23,958 72	29,454 22	59 73	39 47
Iron	118	12	19	122	167	1,069	17,214 75	57,452 77	74,667 52	103 08	53 74
Isabella	36	108	31	121	267	1,011	17,193 50	49,325 29	66,518 79	64 39	48 78
Jackson	68	149	46	299	399	2,682	33,747 25	136,422 30	170,169 55	84 58	50 87
Kalamazoo	266	120	54	361	470	3,227	48,202 65	153,588 82	201,791 47	102 55	47 59
Kalkaska	20	49	10	67	82	523	5,122 50	23,695 80	28,818 30	62 47	45 30
Kent	659	200	76	805	709	7,625	87,358 56	504,898 44	592,257 00	123 21	66 21
Keweenaw	....	45	6	44	60	384	4,342 76	21,153 97	25,496 73	72 38	55 09
Lake	12	47	10	57	79	372	4,085 75	15,453 80	19,539 55	51 72	41 54
Lapeer	70	124	31	174	267	1,568	17,384 87	67,971 48	85,356 35	65 11	44 77
Leelanau	16	68	21	63	162	506	10,267 50	23,431 75	33,699 25	63 38	46 30
Lenawee	150	186	49	302	319	3,912	34,721 75	132,441 60	167,163 35	45 57	33 86
Livingston	140	131	26	173	219	1,344	12,068 55	51,955 56	64,024 11	55 10	38 65
Luce	21	14	3	35	30	317	3,175 75	16,665 00	19,840 75	105 86	52 57
Mackinac	17	55	16	61	139	499	9,632 00	24,471 34	34,103 34	69 29	49 04
Macomb	104	103	32	171	295	1,647	22,917 75	79,497 75	102,415 50	77 69	48 27
Manistee	87	72	26	155	233	1,358	19,093 25	72,295 86	91,389 11	81 94	53 23
Marquette	273	61	39	303	366	2,873	42,609 65	170,886 23	213,495 88	116 42	59 48
Mason	73	73	24	129	219	1,101	15,035 90	57,227 59	72,263 49	68 65	51 98
Mecosta	48	104	29	133	230	1,119	14,440 00	50,625 26	65,065 26	62 78	45 24
Menominee	111	83	19	176	176	1,608	16,079 50	84,431 99	100,511 49	91 36	52 51
Midland	46	86	13	112	128	1,044	7,022 75	42,735 50	49,758 25	54 86	40 93
Missaukee	31	64	18	84	136	664	8,637 50	30,299 00	38,936 50	63 51	45 64
Monroe	55	142	41	158	358	1,389	22,145 50	66,211 89	88,357 39	61 86	47 66
Montcalm	89	141	47	192	405	1,671	25,136 27	74,677 78	99,814 05	62 06	44 93
Montmorency	13	23	8	29	62	252	3,485 00	9,675 00	13,160 00	56 21	38 39
Muskegon	184	88	38	273	356	2,394	35,038 75	134,507 09	169,545 84	98 42	56 18
Newaygo	44	124	31	154	256	1,165	15,284 25	53,267 06	68,551 31	59 70	45 72
Oakland	169	87	45	334	421	2,960	30,655 80	138,526 27	169,182 07	72 81	46 80
Oceana	38	101	20	136	160	1,114	10,961 04	53,781 33	64,762 37	68 63	48 27
Ogemaw	26	51	12	70	101	585	6,934 00	24,761 62	31,695 62	68 65	42 33

Ontonagon	78	19	16	83	152	781	12,236 00	43,450 00	55,686 00	80 50	55 63
Osceola	41	90	20	130	171	1,074	12,049 25	50,709 13	62,758 38	70 46	47 21
Oscoda	....	33	7	26	46	185	2,191 30	7,560 75	9,752 05	47 64	40 87
Otsego	28	33	17	55	110	412	6,637 01	20,494 65	27,131 66	60 33	49 74
Ottawa	174	114	49	248	429	2,291	32,378 99	111,022 57	143,401 56	75 47	48 84
Presque Isle	30	42	14	60	124	531	7,940 00	24,689 00	32,629 00	64 03	46 49
Roscommon	5	28	5	33	31	228	1,767 50	9,485 50	11,253 00	57 01	41 60
Saginaw	300	166	62	422	591	3,952	60,792 50	224,878 57	285,671 07	102 86	56 90
St. Clair	165	159	29	307	261	2,728	23,439 85	133,735 44	157,175 29	89 81	49 02
St. Joseph	163	114	38	139	336	1,632	22,851 50	74,633 56	97,485 06	68 01	47 12
Sanilac	77	145	64	161	597	1,434	41,637 25	68,810 24	110,447 49	69 74	50 08
Schoolcraft	39	30	10	69	62	607	6,027 50	33,950 87	39,978 37	97 21	55 93
Shiawassee	114	117	32	219	295	1,889	22,517 95	87,741 91	110,259 86	76 33	46 45
Tuscola	89	147	41	207	379	1,809	23,533 80	80,970 19	104,503 99	62 09	48 86
Van Buren	124	136	43	233	357	1,946	27,619 50	89,511 54	117,131 04	77 36	46 00
Washtenaw	181	154	33	308	323	2,776	33,721 04	144,933 79	178,654 83	104 39	52 21
Wayne	2,036	142	277	1,937	2,702	18,948	279,919 58	1,574,316 54	1,854,236 12	103 98	83 13
Wexford	95	83	30	171	228	1,287	17,944 03	64,951 04	82,895 07	78 70	50 47

TABLE V.

Resources of school districts as reported by township clerks for the year ending July 8, 1912.

Counties.	Ordinary receipts.							Received from loans.	Money on hand July 10, 1911.	Total resources including amount on hand and loans.
	One mill tax.	Primary school interest fund.	Library money.	Tuition of non-resident pupils.	District taxes for all purposes.	Raised from all other sources.	Total net receipts.			
Totals	$1,049,400 20	$618,059 64	$68,835 63	$266,146 94	$7,418,292 31	$768,648 49	$10,189,383 21	$4,359,244 34	$7,281,819 51	$21,830,447 06
Alcona	$30 11	$3,669 50	$111 03	$113 00	$8,327 14	$3,866 09	$16,116 87	$15,293 02	$27,670 91	$59,080 80
Alger		953 00	442 05		46,124 24	3,334 45	50,853 74	8,505 00	21,765 53	81,124 27
Allegan	15,721 05	6,897 02	59 95	6,153 67	79,489 11	7,230 40	115,551 20	20,980 94	127,716 54	264,248 68
Alpena		30,743 50	276 79	32 50	31,219 13	13,906 09	76,178 01	2,024 22	47,050 46	125,252 69
Antrim	3,876 06	4,196 73	249 35	1,321 34	38,417 37	3,540 68	51,601 53	7,841 97	52,023 19	111,466 69
Arenac	43 05	2,377 82	74 98	422 50	16,058 40	5,138 04	24,114 79	4,614 96	46,868 07	75,597 82
Baraga	1,806 37	516 00	50 56		28,888 01	2,554 15	33,815 09	16,367 85	14,588 00	64,770 94
Barry	11,381 79	3,970 42	175 46	5,012 14	54,169 51	15,416 35	90,125 67	27,506 18	38,718 18	156,350 03
Bay	19,705 00	10,764 50	398 08	722 36	115,654 45	14,193 68	161,438 07	8,564 20	303,184 57	473,186 84
Benzie	2,836 07	6,459 42	229 83	270 10	28,780 62	4,705 81	43,281 85	9,253 26	21,000 10	73,535 21
Berrien	14,293 41	13,825 83	801 14	8,919 26	119,384 88	9,012 39	166,236 91	58,549 28	183,265 02	408,051 21
Branch	18,393 89	12,918 20	782 48	5,515 53	57,249 10	2,263 65	97,122 85	11,862 34	56,618 07	165,603 26
Calhoun	20,238 50	7,515 47	185 61	7,890 54	212,491 71	5,852 93	254,174 76	89,033 63	96,290 85	439,499 24
Cass	14,897 20	3,234 00	242 70	2,488 46	45,298 92	3,397 82	69,559 10	35,385 15	32,703 04	137,647 29
Charlevoix	5,803 97	5,110 50	129 59	1,434 53	71,660 46	7,002 33	91,141 38	43,662 28	34,763 98	169,567 64
Cheboygan	857 57	3,854 94	2,477 40	888 15	39,330 46	21,773 93	69,182 45	23,050 42	64,077 27	156,310 14
Chippewa	9,396 32	4,232 50	484 77	690 00	71,805 14	2,248 59	88,857 32	6,019 55	76,255 91	171,132 78
Clare	4,839 43	2,108 40	162 00	1,421 27	15,065 82	3,454 79	27,051 71	3,503 98	39,944 77	70,500 46
Clinton	15,156 31	3,510 00	373 05	5,366 23	50,854 67	6,722 12	81,982 38	11,771 94	74,067 07	167,812 39
Crawford	156 27	3,333 60	48 65		10,553 61	1,214 08	15,306 21	500 00	13,492 09	29,298 30
Delta	1,480 95	4,837 00	1,008 37	1,585 24	101,171 52	7,317 28	117,400 36	53,189 38	60,838 64	231,428 38
Dickinson	9,359 41	28,109 45	904 54	1,504 38	121,300 47	9,946 73	171,124 98	111,085 45	84,809 21	367,019 64
Eaton	18,601 77	5,071 90	214 73	7,196 10	69,337 20	2,418 57	102,840 27	14,509 38	63,418 44	180,768 09
Emmet	1,424 31	4,422 24	383 55	983 39	52,247 57	8,958 31	68,419 37	5,099 69	68,223 52	141,742 58
Genesee	39,736 99	8,523 09	116 08	9,125 44	144,739 65	7,331 20	209,572 45	119,718 24	99,964 23	429,254 92
Gladwin	457 16	1,866 00	439 73	1,058 82	13,472 20	3,254 50	20,548 41	4,042 29	44,328 37	68,919 07
Gogebic	31,248 25	6,819 50	1,162 53	622 50	170,332 69	25,041 49	235,226 92	94,930 30	42,217 47	372,374 69
Grand Traverse	10,145 15	5,374 02	172 80	3,010 27	35,237 85	13,910 80	67,850 89	6,642 84	75,557 06	150,050 79
Gratiot	7,597 63	7,316 91	414 42	4,891 63	69,397 71	72,923 04	162,541 34	18,422 42	86,399 37	267,363 13
Hillsdale	19,273 48	5,331 34	584 89	8,730 00	72,660 70	1,191 97	107,772 38	59,301 46	47,660 72	214,734 56

Houghton	73,146 33	13,613 00	478 46	11,220 63	357,692 60	24,992 98	481,144 00	13,014 56	395,871 85	890,030 41
Huron	5,820 65	7,112 00	315 97	2,358 76	48,430 21	5,656 38	69,693 97	14,524 02	185,681 82	269,809 81
Ingham	29,702 86	7,366 14	1,678 19	8,809 03	144,211 94	3,742 54	195,510 70	33,697 91	130,407 50	359,616 11
Ionia	14,371 94	4,557 50	468 71	7,060 81	76,945 65	3,826 98	107,221 59	77,660 90	56,576 47	241,458 96
Iosco	542 38	7,371 14	77 87	358 79	16,561 96	7,060 00	31,962 14	6,259 59	30,860 78	69,082 51
Iron	8,354 74	1,999 00	1,876 13	268 90	135,805 13	3,397 14	151,701 04	32,097 71	25,375 04	209,173 79
Isabella	2,592 17	7,452 19	582 07	1,670 23	36,720 33	3,705 80	52,722 79	17,654 87	85,201 80	155,579 46
Jackson	35,303 43	7,514 00	1,246 22	5,513 00	182,045 91	6,904 86	238,527 42	77,646 47	70,252 24	386,426 13
Kalamazoo	36,594 20	7,798 93	553 16	5,665 49	198,503 62	13,389 78	262,505 18	463,922 39	49,144 66	775,572 23
Kalkaska	2,327 20	1,639 70	366 18	563 19	15,707 82	3,860 49	24,464 58	4,587 47	27,167 45	56,219 50
Kent	103,217 07	25,372 53	399 37	11,879 64	440,787 97	26,414 89	608,571 47	316,874 94	233,697 54	1,159,143 95
Keweenaw	5,428 46	1,039 50	561 86		22,967 06	2,017 72	32,014 60		43,018 47	75,033 07
Lake	271 36	1,820 22	26 14	281 00	10,788 61	3,889 97	17,077 30	7,138 34	23,370 53	47,586 17
Lapeer	13,296 39	9,477 19	483 83	4,458 04	40,556 90	3,710 14	71,982 49	18,816 54	69,503 36	160,302 39
Leelanau	1,620 16	3,510 06	27 70	557 82	17,084 33	830 70	23,630 77	4,953 63	43,324 46	71,908 86
Lenawee	37,189 84	6,705 50	4,584 33	11,568 69	104,181 66	2,382 22	166,612 24	63,521 94	84,952 91	315,087 09
Livingston	14,964 36	4,436 33	98 32	4,123 77	29,406 93	812 98	53,842 69	11,104 79	32,986 40	97,933 88
Luce	2,764 60	478 50	20 60	246 00	28,342 70	639 14	32,491 54	13,962 50	10,388 96	56,843 00
Mackinac	2,228 13	1,341 50	44 12	50	24,601 62	3,717 91	32,023 78	22,254 64	21,013 38	75,291 80
Macomb	17,385 29	4,786 00	4,543 55	3,785 44	48,227 67	4,670 03	83,397 98	24,366 82	118,000 09	225,764 89
Manistee	1,859 79	9 671 50	504 24	2,837 36	50,534 76	4,882 29	70,289 94	35,589 90	75,981 49	181,861 33
Marquette	49,607 23	8,141 50	9,510 20	102 14	285,901 22	8,298 66	361,560 95	114,851 29	121,465 60	597,877 84
Mason	1,563 67	5,386 36	183 26	1,254 80	44,816 65	6,198 90	59,403 64	28,751 16	65,991 44	154,146 24
Mecosta	4,564 45	8,062 40	223 87	1,004 35	33,122 10	4,138 16	51,115 33	4,671 61	72,131 70	127,918 64
Menominee	6,454 66	5,721 00	219 00	398 10	60,926 61	6,790 77	80,510 14	11,468 54	82,955 59	174,934 27
Midland	777 92	2,704 00	138 31	2,518 22	26,062 12	4,447 19	36,647 76	5,922 82	60,836 37	103,406 95
Missaukee	1,279 87	3,966 88	93 36	985 77	23,200 80	2,742 38	32,289 06	4,421 33	42,961 11	79,671 50
Monroe	8,994 84	6,255 00	1,131 09	3,513 65	42,945 91	2,232 86	65,073 35	75,765 44	125,674 12	266,512 91
Montcalm	6,852 64	10,463 67	630 53	5,231 02	54,375 97	15,202 02	92,755 85	51,888 29	120,559 69	265,203 83
Montmorency	38 91	589 50	68 31		12,932 45	1,583 97	15,213 14	7,500 00	13,377 82	36,090 96
Muskegon	16,221 53	7,239 92	1,917 69	1,935 87	104,697 19	69,096 48	201,108 68	112,896 77	92,241 37	406,246 82
Newaygo	5,351 26	4,831 84	482 32	2,261 88	37,406 83	5,621 84	55,955 97	8,373 77	70,685 46	135,015 20
Oakland	29,275 65	31,192 90	1,061 69	8,864 96	138,255 28	12,038 61	230,689 29	262,829 81	118,789 72	612,308 82
Oceana	2,787 95	3,788 40	64 13	2,816 56	35,020 54	5,623 56	50,101 14	9,896 17	73,736 14	133,733 45
Ogemaw	496 47	1,657 22	117 78	635 75	13,410 80	2,373 38	18,691 40	4,717 52	45,322 66	68,731 58
Ontonagon	3,353 46	1,399 00	418 29		70,331 49	6,384 58	81,886 82	28,578 79	31,866 19	142,331 80
Osceola	3,387 25	3,332 54	221 20	2,546 93	32,419 18	5,428 81	47,335 89	10,837 90	60,355 26	118,529 05
Oscoda	3,062 15	859 80	54	4 00	3,192 35	2,925 70	10,044 54	1,156 00	10,821 69	22,022 23
Otsego	2,077 30	1,752 00	203 29	262 50	17,237 48	3,640 81	25,173 38	2,542 93	30,857 43	58,573 74
Ottawa	6,667 68	9,785 40	499 09	4,751 54	88,926 52	7,357 99	117,988 22	37,988 02	148,172 86	304,149 10

TABLE V.—*Concluded.*

Counties	Ordinary receipts.							Received from loans.	Money on hand July 10, 1911.	Total resources including amount on hand and loans.
	One mill tax.	Primary school interest fund.	Library money.	Tuition of non-resident pupils.	District taxes for all purposes.	Raised from all other sources.	Total net receipts.			
Presque Isle	$1,657 30	$2,116 30	$48 75	$319 50	$18,902 22	$7,727 67	$30,771 74	$5,396 97	$63,673 26	$99,841 97
Roscommon	430 11	312 50	....	62 00	8,656 25	2,108 53	11,569 39	1,718 34	9,029 00	22,316 73
Saginaw	3,743 84	19,737 32	920 99	7,614 34	221,214 85	13,479 09	266,719 43	28,696 57	298,238 87	593,654 87
St. Clair	21,637 42	7,984 24	731 27	3,016 35	75,580 80	6,083 11	115,033 19	35,881 45	151,947 99	302,862 63
St. Joseph	17,070 91	3,543 90	491 80	5,575 60	69,033 68	4,198 25	99,914 14	4,770 22	36,719 21	181,403 57
Sanilac	5,323 00	6,049 00	353 74	3,746 21	59,494 53	5,139 35	80,105 83	34,688 25	142,097 89	256,891 97
Schoolcraft	2,256 43	14,313 50	261 01	602 71	40,030 84	1,548 24	59,012 73	1,806 41	25,585 92	86,405 06
Shiawassee	17,799 47	4,586 00	596 96	3,582 54	69,674 57	2,384 33	98,623 87	44,399 39	58,523 29	201,546 55
Tuscola	8,088 79	10,003 08	173 67	6,127 42	53,145 87	6,235 85	83,774 68	23,673 17	124,997 59	232,445 44
Van Buren	16,417 05	9,673 36	533 53	10,758 19	71,565 33	44,645 62	153,593 08	42,341 28	83,936 61	279,870 97
Washtenaw	37,257 67	6,496 82	481 69	9,076 09	134,634 90	8,070 19	196,017 36	30,283 85	84,321 67	310,622 88
Wayne	41,876 33	69,517 10	14,137 43	4,553 13	1,396,530 18	70,164 95	1,596,779 12	1,090,518 15	888,125 29	3,575,422 56
Wexford	5,288 21	3,651 96	317 71	1,438 38	53,731 13	5,119 24	69,546 63	39,130 58	67,562 85	176,240 06

TABLE VI.

Expenditures of school districts as reported by township clerks for the year ending July 8, 1912.

Counties.	Ordinary expenditures for maintaining the schools.								Paid on indebtedness (principal).	Amount on hand July 8, 1912.	Total expenditures including amount on hand and paid on indebtedness.
	Paid men teachers.	Paid women teachers.	Paid for building and sites.	Paid for books and care of library.	Paid for tuition.		Paid for general purposes.	Total net expenses.			
					General.	Eighth grade.					
Totals	$1,963,691 39	$7,980,024 99	$2,199,021 46	$233,850 96	$6,900 21	$192,752 75	$4,154,025 30	$16,730,370 08	$1,400,106 47	$3,699,970 51	$21,830,447 06
Alcona	$5,975 50	$13,139 00	$3,456 53	$290 93	....	....	$7,105 34	$29,697 30	$1,759 54	$27,353 96	$59,080 80
Alger	7,110 00	25,461 63	1,540 64	186 50	....	....	21,710 77	56,009 54	3,500 00	21,614 73	81,124 27
Allegan	30,930 34	99,244 57	16,608 34	1,060 39	$76 00	$4,651 14	53,111 97	205,682 75	9,775 25	48,790 68	264,248 68
Alpena	9,015 00	50,860 19	17,046 13	611 97	....	15 00	21,517 69	99,085 98	475 00	25,691 71	125,252 69
Antrim	12,018 97	47,415 01	2,201 89	371 66	....	1,328 09	20,845 69	84,181 31	4,846 58	22,438 80	111,466 69
Arenac	8,390 62	23,720 00	698 49	326 82	....	365 00	14,401 63	47,902 56	1,850 00	25,845 26	75,597 82
Baraga	9,225 00	19,115 00	9,206 54	269 83	....	30 00	18,279 30	56,125 67	7,402 62	1,242 65	64,770 94
Barry	20,164 75	66,174 75	420 31	650 42	....	3,433 33	25,639 02	116,482 58	15,561 06	24,306 39	156,350 03
Bay	36,098 00	162,446 40	4,484 53	380 08	....	1,427 25	88,132 66	292,968 92	11,306 21	168,911 71	473,186 84
Benzie	10,446 25	30,597 06	1,539 16	339 30	....	381 55	16,425 16	59,740 48	5,525 00	8,269 73	73,535 21
Berrien	44,123 15	130,401 28	61,406 88	1,031 11	....	5,216 33	68,813 39	311,067 66	30,732 89	66,250 66	408,051 21
Branch	25,714 50	66,034 37	394 00	1,192 24	....	4,679 80	29,923 19	127,938 10	4,787 10	32,878 06	165,603 26
Calhoun	37,023 67	169,161 34	90,948 13	4,249 40	80 18	5,136 91	105,354 97	411,954 60	15,832 77	11,711 87	439,499 24
Cass	18,278 00	56,909 50	958 13	223 14	387 28	1,856 89	27,329 85	106,032 79	19,722 65	11,891 85	137,647 29
Charlevoix	13,053 11	62,854 47	4,254 70	2,090 51	3 00	1,214 41	37,797 63	121,267 83	33,236 83	15,062 98	169,567 64
Cheboygan	9,556 25	52,300 74	3,632 28	2,194 89	....	972 75	36,862 68	105,519 59	7,817 96	42,972 59	156,310 14
Chippewa	22,440 38	66,931 34	6,464 14	475 15	....	646 00	43,857 30	140,814 31	3,581 63	26,736 84	171,132 78
Clare	8,545 00	27,116 46	3,035 12	323 06	....	840 99	13,559 15	53,419 78	2,016 52	15,064 16	70,500 46
Clinton	18,200 58	65,822 00	10,191 04	865 05	200 00	3,513 42	27,535 33	126,327 42	5,392 10	36,101 87	167,821 39
Crawford	3,200 00	11,660 75	378 93	24 29	8 50	....	5,766 79	21,039 26	1,148 73	7,110 31	29,298 30
Delta	21,183 53	85,165 05	180,721 65	4,248 03	....	1,038 88	61,415 99	353,773 13	8,224 16	5,022 35	367,019 64
Dickinson	22,299 74	88,166 68	948 65	801 57	173 50	4,975 55	35,496 27	152,861 96	7,455 27	20,450 86	180,768 09
Eaton	14,883 08	53,745 65	2,421 80	533 77	....	697 16	25,952 81	98,234 27	17,383 97	26,124 34	141,742 58
Emmet	17,866 96	87,262 96	31,479 40	520 21	370 00	960 00	51,201 36	189,660 89	27,558 00	14,209 49	231,428 38
Genesee	30,581 05	154,851 08	29,549 19	5,069 51	398 54	4,654 23	88,473 98	313,577 58	42,035 02	73,642 32	429,254 92
Gladwin	5,716 50	22,473 56	934 96	129 70	....	604 50	12,126 47	41,985 69	2,331 00	24,602 38	68,919 07
Gogebic	22,154 00	103,486 99	32,820 73	645 93	....	450 00	64,138 79	223,696 44	109,387 01	39,291 24	372,374 69
Grand Traverse	18,972 60	54,988 34	2,621 76	394 57	....	1,188 70	30,338 07	108,504 04	2,875 00	38,671 75	150,050 79
Gratiot	26,285 37	72,132 56	19,057 24	595 95	....	4,118 48	40,079 86	162,269 46	9,235 89	95,857 78	267,363 13
Hillsdale	29,973 03	79,300 53	11,055 99	854 30	376 00	8,114 50	37,302 65	166,977 09	36,919 39	10,838 08	214,734 56

TABLE V.—*Concluded.*

Counties.	Ordinary receipts.							Received from loans.	Money on hand July 10, 1911.	Total resources including amount on hand and loans.
	One mill tax.	Primary school interest fund.	Library money.	Tuition of non-resident pupils.	District taxes for all purposes.	Raised from all other sources.	Total net receipts.			
Presque Isle	$1,657 30	$2,116 30	$48 75	$319 50	$18,902 22	$7,727 67	$30,771 74	$5,396 97	$63,673 26	$99,841 97
Roscommon	430 11	312 50	....	62 00	8,656 25	2,108 53	11,569 39	1,718 34	9,029 00	22,316 73
Saginaw	3,743 84	19,737 32	929 99	7,614 34	221,214 85	13,479 09	266,719 43	28,696 57	298,238 87	593,654 87
St. Clair	21,637 42	7,984 24	731 27	3,016 35	75,580 80	6,083 11	115,033 19	35,881 45	151,947 99	302,862 63
St. Joseph	17,070 91	3,543 90	491 80	5,575 60	69,033 68	4,198 25	99,914 14	4,770 22	36,719 21	181,403 57
Sanilac	5,323 00	6,049 00	353 74	3,746 21	59,494 53	5,139 35	80,105 83	34,688 25	142,097 89	256,891 97
Schoolcraft	2,256 43	14,313 50	261 01	602 71	40,030 84	1,548 24	59,012 73	1,806 41	25,585 92	86,405 06
Shiawassee	17,799 47	4,586 00	596 96	3,582 54	69,674 57	2,384 33	98,623 87	44,399 39	58,523 29	201,546 55
Tuscola	8,088 79	10,003 08	173 67	6,127 42	53,145 87	6,235 85	83,774 68	23,673 17	124,997 59	232,445 44
Van Buren	16,417 05	9,673 36	533 53	10,758 19	71,565 33	44,645 62	153,593 08	42,341 28	83,936 61	279,870 97
Washtenaw	37,257 67	6,496 82	481 69	9,076 09	134,634 90	8,070 19	196,017 36	30,283 85	84,321 67	310,622 88
Wayne	41,876 33	69,517 10	14,137 43	4,553 13	1,396,530 18	70,164 95	1,596,779 12	1,090,518 15	888,125 29	3,575,422 56
Wexford	5,288 21	3,651 96	317 71	1,438 38	53,731 13	5,119 24	69,546 63	39,130 58	67,562 85	176,240 06

TABLE VI.

Expenditures of school districts as reported by township clerks for the year ending July 8, 1912.

Counties.	Ordinary expenditures for maintaining the schools.								Paid on indebtedness (principal).	Amount on hand July 8, 1912.	Total expenditures including amount on hand and paid on indebtedness.
	Paid men teachers.	Paid women teachers.	Paid for building and sites.	Paid for books and care of library.	Paid for tuition.		Paid for general purposes.	Total net expenses.			
					General.	Eighth grade.					
Totals	$1,963,691 39	$7,980,024 99	$2,199,021 40	$233,850 96	$6,900 21	$192,752 75	$4,154,025 30	$16,730,370 08	$1,400,106 47	$3,699,970 51	$21,830,447 06
Alcona............	$5,975 50	$13,139 00	$3,456 53	$290 93	....	....	$7,105 34	$29,697 30	$1,759 54	$27,353 96	$59,060 80
Alger............	7,110 00	25,401 63	1,540 64	186 50	....	....	21,710 77	56,009 54	3,500 00	21,614 73	81,124 27
Allegan..........	30,930 34	99,244 57	16,608 34	1,060 39	$76 00	$4,651 14	53,111 97	205,682 75	9,775 25	48,790 68	264,248 68
Alpena............	9,015 00	50,880 19	17,046 13	611 97	....	15 00	21,517 69	99,085 98	475 00	25,691 71	125,252 69
Antrim...........	12,018 97	47,415 01	2,201 89	371 66	....	1,328 09	20,845 69	84,181 31	4,846 58	22,438 80	111,466 69
Arenac............	8,390 62	23,720 00	698 49	326 82	....	365 00	14,401 63	47,902 56	1,850 00	25,845 26	75,597 82
Baraga............	9,225 00	19,115 00	9,206 54	269 83	....	30 00	18,279 30	56,125 67	7,402 62	1,242 65	64,770 94
Barry............	20,164 75	66,174 75	420 31	650 42	....	3,433 33	25,639 02	116,482 68	15,561 06	24,306 39	156,350 03
Bay............	36,098 00	162,446 40	4,484 53	380 08	....	1,427 25	88,132 66	292,968 92	11,306 21	168,911 71	473,186 84
Benzie............	10,446 25	30,597 06	1,539 16	339 30	....	381 55	16,425 16	59,740 48	5,525 00	8,269 73	73,535 21
Berrien............	44,123 15	130,401 28	61,406 88	1,031 11	....	5,216 33	68,813 30	311,067 66	30,732 89	66,250 66	408,051 21
Branch............	25,714 50	66,034 37	394 00	1,192 24	....	4,679 80	29,923 19	127,938 10	4,787 10	32,878 06	165,603 26
Calhoun...........	37,023 67	169,161 34	90,948 13	4,249 40	80 18	5,136 91	105,354 97	411,954 60	15,832 77	11,711 87	439,499 24
Cass.............	18,278 00	56,999 50	958 13	223 14	387 28	1,856 89	27,329 85	106,032 79	19,722 65	11,891 85	137,647 29
Charlevoix.........	13,053 11	62,854 47	4,254 70	2,090 51	3 00	1,214 41	37,797 63	121,267 83	33,236 83	15,062 98	169,567 64
Cheboygan........	9,556 25	52,300 74	3,632 28	2,194 89	....	972 75	36,862 68	105,519 59	7,817 96	42,972 59	156,310 14
Chippewa.........	22,440 38	66,931 34	6,464 14	475 15	....	646 00	43,857 30	140,814 31	3,581 63	26,736 84	171,132 78
Clare............	8,545 00	27,116 46	3,035 12	323 06	....	840 99	13,559 15	53,419 78	2,016 52	15,064 16	70,500 46
Clinton...........	18,200 58	65,822 00	10,191 04	865 05	200 00	3,513 42	27,535 33	126,327 42	5,392 10	36,101 87	167,821 39
Crawford..........	3,200 00	11,660 75	378 93	24 29	8 50	....	5,766 79	21,039 26	1,148 73	7,110 31	29,298 30
Delta............	21,183 53	85,165 05	180,721 65	4,248 03	....	1,038 88	61,415 99	353,773 13	8,224 16	5,022 35	367,019 64
Dickinson.........	22,299 74	88,166 68	948 65	801 57	173 50	4,975 55	35,496 27	152,861 96	7,455 27	20,450 86	180,768 09
Eaton............	14,883 08	53,745 65	2,421 80	533 77	....	697 16	25,952 81	98,234 27	17,383 97	26,124 34	141,742 58
Emmet............	17,866 96	87,262 96	31,479 40	520 21	370 00	960 00	51,201 36	189,660 89	27,558 00	14,209 49	231,428 38
Genesee.........	30,581 05	154,851 08	29,549 19	5,069 51	398 54	4,654 23	88,473 98	313,577 58	42,035 02	73,642 32	429,254 92
Gladwin...........	5,716 50	22,473 56	934 96	129 70	....	604 50	12,126 47	41,985 69	2,331 00	24,602 38	68,919 07
Gogebic...........	22,154 00	103,486 99	32,820 73	645 93	....	450 00	64,138 79	223,696 44	109,387 01	39,291 24	372,374 69
Grand Traverse....	18,972 60	54,988 34	2,621 76	394 57	....	1,188 70	30,338 07	108,504 04	2,875 00	38,671 75	150,050 79
Gratiot............	26,285 37	72,132 56	19,057 24	595 95	....	4,118 48	40,079 86	162,269 46	9,235 89	95,857 78	267,363 13
Hillsdale..........	29,973 03	79,300 53	11,055 99	854 30	376 00	8,114 59	37,302 65	166,977 09	36,919 39	10,838 08	214,734 56

TABLE VI.—*Concluded.*

Counties.	Ordinary expenditures for maintaining the schools.								Paid on indebtedness (principal).	Amount on hand July 8, 1912.	Total expenditures including amount on hand and paid on indebtedness.
	Paid men teachers.	Paid women teachers.	Paid for building and sites.	Paid for books and care of library.	Paid for tuition.		Paid for general purposes.	Total net expenses.			
					General.	Eighth grade.					
Houghton	$74,666 50	$336,975 04	$23,607 45	$8,417 25		$8,195 50	$222,734 33	$674,596 07	$6,450 00	$208,984 34	$890,030 41
Huron	36,942 00	75,069 75	5,849 47	937 22	$94 00	2,200 54	40,940 41	162,033 39	14,771 77	93,094 65	269,899 81
Ingham	30,625 28	137,995 65	19,010 74	8,232 66	634 52	4,238 83	62,067 26	262,794 94	16,562 31	80,258 86	359,616 11
Ionia	22,227 50	93,423 50	6,740 63	1,213 79	108 25	5,261 58	43,194 39	172,169 64	39,113 27	30,176 05	241,458 96
Iosco	5,495 50	23,781 22	2,826 20	52 26		192 00	12,404 05	44,751 23	2,645 52	21,685 76	69,082 51
Iron	17,214 75	57,452 77	14,980 62	2,256 55	94 88	60 00	73,190 40	165,249 97	36,110 02	7,813 80	209,173 79
Isabella	17,193 50	49,305 29	6,241 36	547 81		1,933 00	29,279 90	104,500 86	4,385 61	46,692 99	155,579 46
Jackson	33,647 25	136,247 30	29,901 45	2,741 41	137 60	4,006 01	107,676 72	314,357 74	52,707 66	19,360 73	386,426 13
Kalamazoo	48,202 65	153,375 82	49,126 38	11,277 97	160 95	3,124 04	106,679 52	371,947 33	153,518 11	250,106 79	775,572 23
Kalkaska	5,150 50	23,411 01	570 46	196 18		551 84	9,746 59	39,626 58	1,440 00	15,152 92	56,219 50
Kent	87,358 56	504,415 12	185,881 29	2,191 24	157 95	6,720 26	231,167 81	1,017,892 23	63,817 86	77,433 86	1,159,143 95
Keweenaw	4,342 76	21,153 97	13,023 48	529 91		2,055 00	13,993 64	55,098 76		19,934 31	75,033 07
Lake	4,085 75	15,153 57	7,628 50	18 67	31 50	396 00	9,246 36	36,560 35	3,968 84	7,056 98	47,586 17
Lapeer	17,384 87	67,947 48	5,706 54	770 56		4,407 75	26,005 43	122,224 63	10,467 32	27,610 44	160,302 39
Leelanau	10,027 50	23,167 25	103 17	120 56		1,229 01	13,366 89	48,014 38	984 81	22,909 67	71,908 86
Lenawee	34,721 75	132,231 60	2,811 08	5,239 76	48 00	6,515 47	67,601 51	249,169 17	37,804 34	28,113 58	315,087 09
Livingston	12,068 55	51,583 24	953 56	178 08	12 00	3,917 51	18,069 94	86,802 88	2,890 26	8,240 74	97,933 88
Luce	3,175 75	16,665 00	9,187 02	328 52	115 00	180 00	13,289 63	42,940 92	9,462 50	4,439 58	56,843 00
Mackinac	9,632 00	24,661 34	9,374 97	1,799 56		191 00	16,173 96	61,832 83	8,385 00	5,073 97	75,291 80
Macomb	22,918 25	79,227 75	3,092 14	4,328 36	75 60	2,240 92	36,555 88	148,438 90	7,210 48	70,115 51	225,764 89
Manistee	19,093 25	72,295 86	2,498 65	618 83		2,309 73	39,712 98	136,529 30	5,363 48	39,968 55	181,861 33
Marquette	42,609 65	170,886 23	19,440 65	9,814 83		22 20	116,848 85	359,622 41	139,233 18	99,022 25	597,877 84
Mason	15,021 90	57,227 59	10,686 30	303 48	10 00	1,254 00	31,630 21	116,133 48	13,009 95	25,002 81	154,146 24
Mecosta	14,440 00	50,555 26	495 87	293 56	168 00	944 85	23,360 26	90,257 80	2,660 00	35,000 84	127,918 64
Menominee	16,079 50	84,431 99	13,022 03	894 31	199 60	146 50	33,490 15	148,264 08	1,983 60	24,686 59	174,934 27
Midland	7,022 75	42,706 50	888 41	230 38	474 55	1,681 50	22,468 22	75,471 31	1,992 92	25,942 72	103,406 95
Missaukee	9,000 00	29,994 95	779 11	197 62	28 00	683 15	14,855 08	55,537 91	4,651 17	19,482 42	79,671 50
Monroe	22,145 70	66,035 38	80,502 15	1,658 43		2,554 42	34,397 59	207,293 67	13,127 19	46,092 05	266,512 91
Montcalm	25,136 27	74,677 78	26,107 72	476 21	15 50	3,717 78	39,107 89	169,239 15	6,380 76	89,583 92	265,203 83
Montmorency	3,300 00	9,415 00	8,184 79	11 58		4 50	8,573 47	29,489 34	600 00	6,001 62	36,090 96
Muskegon	35,038 75	134,507 09	95,241 55	12,726 95		1,169 76	79,775 02	358,459 12	7,206 68	40,581 02	406,246 82
Newaygo	15,242 75	53,267 06	3,850 21	494 92	129 00	1,772 22	28,045 43	102,801 59	3,583 84	28,629 77	135,015 20
Oakland	30,655 80	138,361 77	66,325 17	2,263 87	469 42	4,982 32	74,890 36	317,948 71	26,113 45	268,246 66	612,308 82
Oceana	10,913 54	53,771 33	16,847 48	208 94		1,772 02	27,743 76	111,257 07	3,715 73	18,760 65	133,733 45
Ogemaw	6,934 00	24,761 62	2,608 08	277 80		486 00	10,057 36	45,124 86	837 82	22,768 90	68,731 58

Ontonagon	12,200 00	43,450 00	7,529 53	238 64	.....	.....	32,849 85	96,268 02	19,719 80	26,343 98	142,331 80
Osceola	12,049 25	50,637 90	3,352 22	311 37	17 00	2,153 17	21,439 92	89,960 83	5,310 99	23,257 23	118,529 05
Oscoda	2,191 30	7,650 73	407 83	4 04	.....	.....	3,182 59	13,436 51	1,250 00	7,335 72	22,022 23
Otsego	6,637 01	20,482 07	569 26	181 08	.....	60 00	11,335 08	39,264 50	1,575 00	17,734 24	58,573 74
Ottawa	32,378 99	111,022 66	5,938 69	1 785 47	179 65	3,503 89	62,618 11	217,427 46	22,386 67	64,334 97	304,149 10
Presque Isle	7,940 00	24,469 00	4,017 00	85 79	.....	188 75	15,225 12	51,925 66	4,374 72	43,541 59	99,841 97
Roscommon	1,767 50	9,531 50	74 48	.....	.....	10 00	3,762 15	15,145 63	900 00	6,271 10	22,316 73
Saginaw	60,792 50	224,778 57	11,514 90	5,385 61	.....	5,516 24	125,743 75	433,731 57	16,592 05	143,331 25	593,654 87
St. Clair	23,439 85	133,695 93	3,818 94	6,006 29	278 82	3,377 96	68,214 88	238,832 67	20,110 99	43,918 97	302,862 63
St. Joseph	22,806 50	74,583 56	18,966 78	358 85	198 66	4,136 63	32,939 67	153,990 65	19,089 30	8,323 62	181,403 57
Sanilac	41,407 17	68,700 24	23,114 31	614 75	7 53	3,181 00	42,019 44	179,044 44	17,846 15	60,001 38	256,891 97
Schoolcraft	6,027 50	33,895 87	3,006 42	724 42	60 00	320 00	19,225 97	63,260 18	3,712 06	19,432 82	86,405 06
Shiawassee	22,517 95	87,616 50	6,736 73	958 49	71 25	3,038 58	40,425 02	161,364 52	17,108 61	23,073 42	201,546 55
Tuscola	23,533 80	80,967 19	6,065 40	641 87	113 00	4,668 19	38,041 49	154,030 94	16,342 14	62,072 36	232,445 44
Van Buren	27,619 50	89,391 54	28,338 06	734 21	108 65	7,875 09	44,331 14	198,398 19	19,130 80	62,341 98	279,870 97
Washtenaw	33,721 04	144,696 79	7,975 19	5,823 80	412 71	4,629 07	69,705 08	266,963 68	23,979 07	19,680 13	310,622 88
Wayne	279,580 54	1,574,316 54	752,961 17	96,642 22	165 00	5,514 52	613,907 85	3,323,087 84	32,873 75	219,460 97	3,575,422 56
Wexford	17,944 03	61,951 01	20,060 59	553 77	.....	914 60	40,311 18	144,735 21	4,973 77	26,531 08	176,240 06

TABLE VII.

Miscellaneous statistics as reported by township clerks for the year ending July 8, 1912.

Counties.	Bonded indebtedness of the districts.	Total indebtedness of the districts.	Amount due the districts.	Amount paid and due members of school boards and inspectors for services.	Amount paid and due township chairmen and other officers for services.
Totals	$6,697,682 82	$8,958,162 26	$866,897 56	$12,050 70	$62,790 90
Alcona	$19,100 00	$20,500 57	$1,320 00	$92 00	$34 50
Alger	....	5,005 00	146 74	632 50	1,362 50
Allegan	69,115 00	82,314 21	1,178 31	28 50	75 75
Alpena	....	2,024 22	1,263 31	387 00	822 50
Antrim	9,550 00	12,322 98	679 17	6 00	16 00
Arenac	11,575 00	15,190 55	268 01	48 36	56 00
Baraga	59,000 00	66,945 35	....	192 00	1,025 00
Barry	9,254 01	17,792 71	136 76	30 50	821 50
Bay	129,220 27	131,334 03	361 37	110 50	205 50
Benzie	11,682 37	17,635 63	1,169 36	....	11 75
Berrien	134,512 00	165,152 85	1,474 15	64 50	718 50
Branch	4,460 00	13,618 84	346 45	2 25	284 25
Calhoun	70,215 68	135,231 18	1,021 51	51 58	767 58
Cass	17,350 00	24,154 66	769 03	81 50	233 25
Charlevoix	65,340 00	85,287 58	1,829 99	22 00	241 50
Cheboygan	81,250 00	98,762 92	6,977 14	117 00	210 00
Chippewa	40,630 00	45,833 38	2,129 23	581 00	726 00
Clare	13,475 00	15,338 62	608 28	3 00	113 75
Clinton	26,900 00	39,250 13	112 35	12 00	159 25
Crawford	....	657 83	1,244 50	25 00	6 00
Delta	152,777 00	162,381 38	8,618 41	380 00	2,659 00
Dickinson	213,750 00	228,837 15	....	344 00	2,375 00
Eaton	6,700 00	15,876 98	377 06	13 50	433 25
Emmet	20,306 20	21,414 21	2,429 47	23 00	128 00
Genesee	235,475 00	289,024 40	364 60	6 00	264 75
Gladwin	35,000 77	37,427 35	557 06	115 50	106 25
Gogebic	142,000 00	175,153 50	58,463 46	658 00	3,050 00
Grand Traverse	26,596 00	30,591 55	1,322 57	8 00	332 00
Gratiot	109,500 00	121,010 54	534 16	390 00	171 50
Hillsdale	59,900 00	97,964 77	334 11	7 00	261 00
Houghton	189,945 80	203,014 56	112 32	632 00	3,130 00
Huron	81,629 00	95,991 75	1,533 32	41 00	45 50
Ingham	76,010 00	90,936 52	742 04	12 00	441 50
Ionia	60,000 00	85,938 76	741 52	19 25	369 50
Iosco	14,258 77	21,878 62	1,631 43	23 25	279 50
Iron	151,000 00	187,860 91	....	499 00	1,285 00
Isabella	30,100 00	42,521 67	1,167 77	41 00	274 50
Jackson	129,610 50	162,023 96	1,327 95	31 00	1,081 25
Kalamazoo	597,390 00	612,473 22	92,053 76	....	2,043 00
Kalkaska	1,100 00	5,184 76	1,042 53	5 00	22 50
Kent	692,441 02	925,927 68	2,262 00	25 50	83 00
Keweenaw	....	....	....	172 00	730 00
Lake	10,975 00	15,730 72	2,522 21	21 00	26 50
Lapeer	17,110 00	33,387 85	954 91	2 25	101 25
Leelanau	14,915 00	19,981 00	934 27	....	38 00
Lenawee	116,310 00	151,109 02	162 78	310 76	365 75
Livingston	1,475 80	10,386 35	90 45	20 00	36 00
Luce	27,500 00	29,500 00	952 27	465 00	850 00
Mackinac	19,900 00	29,169 64	1,712 82	409 00	1,847 00
Macomb	46,410 00	59,516 96	87 08	30 00	484 00
Manistee	16,350 00	51,600 19	5,499 31	65 00	252 50
Marquette	240,500 00	250,723 51	36 90	940 00	4,668 00
Mason	36,425 00	50,374 58	3,781 00	22 50	322 25
Mecosta	3,415 00	8,533 94	999 93	30 00	205 75
Menominee	9,678 89	21,556 98	3,580 36	908 00	1,814 75

TABLE VII.—*Concluded.*

Counties.	Bonded indebtedness of the districts.	Total indebtedness of the districts.	Amount due the districts.	Amount paid and due members of school boards and inspectors for services.	Amount paid and due township chairmen and other officers for services.
Midland	$44,141 00	$49,844 07	$1,342 75	$24 25	$213 25
Missaukee	9,582 24	11,994 38	1,120 51	15 00	39 75
Monroe	116.056 73	131,522 81	1,285 36	12 00	137 00
Montcalm	84,900 00	93,555 28	3,349 06	45 00	114 00
Montmorency	14,300 00	14,800 00	337 15	272 50	468 49
Muskegon	169,450 00	257,226 33	7,228 54	198 50	161 00
Newaygo	21,200 50	25,284 23	2,229 97	64 25	56 75
Oakland	396,811 00	414,615 22	982 53	6 00	231 50
Oceana	18,752 00	29,479 64	379 91	62 25	48 00
Ogemaw	6,500 00	9,234 93	481 68	113 00	277 00
Ontonagon	13,900 00	28,046 88	....	438 00	1,690 00
Osceola	6,496 32	12,444 83	806 24	17 25	65 00
Oscoda	....	150 00	444 32	67 25	77 00
Otsego	4,650 00	8,367 93	607 62	46 00	62 00
Ottawa	107,710 01	131,617 85	345 30	32 50	311 50
Presque Isle	8,450 00	12,498 28	79 96	139 75	127 19
Roscommon	1,900 00	3,854 12	557 29	8 00	7 00
Saginaw	69,570 00	85,115 09	4,278 84	516 00	2,764 25
St. Clair	24,084 00	40,233 01	197 54	29 50	82 50
St. Joseph	45,760 92	62,349 89	710 42	....	358 00
Sanilac	82,675 00	97,306 37	1,468 13	53 00	218 00
Schoolcraft	3,000 00	3,863 94	40 00	331 00	1,600 55
Shiawassee	51,900 00	65,667 28	593 48	186 00	1,548 00
Tuscola	15,885 00	26,672 74	2,537 69	44 50	64 75
Van Buren	39,060 00	54,885 75	1,023 25	113 50	151 00
Washtenaw	243,784 43	260,304 30	478 87	27 50	1,840 84
Wayne	686,100 00	1,620,132 49	612,357 09	6 00	11,585 50
Wexford	51,979 59	67,733 40	1,778 57	25 50	22 25

TABLE VIII.

Cost per capita of public schools of the State for the year ending July 8, 1912.

Counties.	Number of pupils included in school census in—		Number of pupils enrolled in—		Cost per capita for instruction based on school census in—			Cost per capita for instruction based on enrollment in—			Total expense per capita during year based on enrollment in—		
	Graded school districts.	Ungraded school districts.	Graded school districts.	Ungraded school districts.	Graded school districts.	Ungraded school districts.	All school districts.	Graded school districts.	Ungraded school districts.	All school districts.	Graded school districts.	Ungraded school districts.	All school districts.
Totals.	491,293	304,130	344,730	210,407	$14 13	$9 89	$12 51	$20 13	$14 30	$17 92	$37 90	$17 41	$30 13
Alcona	196	1,888	170	1,387	$11 02	$8 98	$9 17	$12 71	$12 22	$12 27	$15 76	$19 67	$19 24
Alger	1,276	663	1,050	495	15 05	20 16	16 79	18 28	27 01	21 08	31 26	46 83	36 25
Allegan	3,903	7,675	3,191	5,349	15 09	9 28	11 24	18 46	13 31	15 24	32 53	19 04	24 08
Alpena	4,152	2,311	2,111	1,382	9 05	9 65	9 26	17 80	16 15	17 14	32 32	22 33	28 36
Antrim	1,757	2,532	1,628	1,867	17 97	11 00	13 85	19 39	14 92	17 00	26 39	22 07	24 08
Arenac	1,391	2,239	1,072	1,593	10 10	8 06	8 84	13 11	11 33	12 05	20 02	16 59	17 97
Baraga	1,907	398	1,317	294	11 87	14 29	12 29	17 19	19 35	17 52	32 86	43 09	34 83
Barry	1,786	4,081	1,581	2,994	20 18	12 32	14 71	22 79	16 79	18 87	31 44	22 29	25 46
Bay	14,184	7,239	7,828	4,257	10 56	6 72	9 26	19 14	11 43	16 43	28 03	17 26	24 24
Benzie	1,734	1,623	1,558	1,234	13 32	11 05	12 22	14 82	14 54	14 70	22 87	19 53	21 39
Berrien	8,480	6,493	6,651	4,186	13 65	9 04	11 65	17 40	14 03	16 10	31 81	23 76	28 70
Branch	2,291	3,995	1,999	2,857	19 50	11 78	14 59	22 35	16 47	18 89	31 20	22 94	26 34
Calhoun	9,324	4,636	7,428	3,319	16 26	11 77	14 77	20 41	16 44	19 18	43 72	26 26	38 33
Cass	1,949	3,116	1,734	2,274	17 73	13 06	14 86	19 92	17 90	18 78	30 27	23 54	26 45
Charlevoix	3,595	2,264	2,944	1,592	14 03	11 24	13 12	17 13	15 99	16 95	27 16	25 94	26 73
Cheboygan	2,725	3,982	1,895	2,243	10 25	11 00	10 65	14 74	15 12	14 92	28 15	23 25	25 50
Chippewa	4,441	3,304	3,137	2,379	12 57	10 15	11 54	17 78	14 10	16 20	29 13	20 77	25 53
Clare	972	2,105	837	1,539	13 60	10 61	11 58	15 89	14 52	15 00	22 14	22 66	22 48
Clinton	1,863	4,502	1,641	2,744	20 51	10 17	13 20	23 29	16 09	19 16	38 17	23 21	28 81
Crawford	622	527	525	478	11 05	15 15	12 93	13 09	16 71	14 81	19 46	22 61	20 97
Delta	6,422	3,260	4,347	2,429	11 50	9 59	10 85	16 99	12 87	15 51	31 01	22 57	27 99
Dickinson	5,994	1,066	4,733	827	15 03	15 22	15 06	19 04	19 62	19 12	65 78	51 27	63 62
Eaton	3,033	3,953	2,947	3,020	15 81	12 51	20 11	20 70	16 37	18 51	28 52	22 77	25 61
Emmet	3,182	2,429	2,192	1,573	13 27	10 86	12 23	19 27	16 77	18 23	27 20	24 54	26 09
Genesee	10,098	4,791	7,870	3,506	13 15	10 97	12 45	16 88	14 74	16 21	30 19	21 30	27 42
Gladwin	677	2,518	644	1,833	10 98	8 24	8 82	11 54	11 32	11 38	17 71	16 68	16 95
Gogebic	6,500	1,217	4,527	893	16 76	13 68	16 28	24 07	18 65	23 18	39 53	50 11	41 27
Grand Traverse	3,042	3,236	2,782	2,344	14 05	9 64	11 78	15 37	13 30	14 42	22 78	19 25	21 16
Gratiot	2,950	5,491	2,545	3,999	16 65	8 98	11 66	19 29	12 33	15 03	36 07	17 61	24 79
Hillsdale	3,235	4,563	2,648	3,280	17 68	11 41	14 01	21 60	15 87	18 43	31 55	25 43	28 16
Houghton	23,015	4,475	16,154	3,015	15 75	10 94	14 97	22 45	16 21	21 47	36 52	28 07	35 19
Huron	4,669	7,417	3,478	4,997	10 75	8 33	9 26	14 43	12 36	13 22	23 81	16 25	19 12
Ingham	8,483	3,782	6,356	2,487	14 76	11 46	13 74	19 70	17 44	19 06	31 51	25 13	29 74
Ionia	3,759	3,984	2,941	2,781	18 64	11 44	14 93	23 82	16 39	20 21	24 28	36 24	30 08
Iosco	1,720	1,324	1,276	897	10 67	8 25	9 61	14 38	12 18	13 47	21 33	19 53	20 59
Iron	4,312	375	3,524	283	15 90	16 28	15 93	19 45	21 57	19 61	43 19	46 02	43 40
Isabella	1,654	5,418	1,001	3,805	12 89	8 33	9 40	21 31	11 87	13 84	37 93	17 47	21 74
Jackson	8,225	4,486	5,009	3,222	14 39	11 48	13 36	21 10	15 99	19 23	43 08	21 82	35 59
Kalamazoo	11,096	3,801	7,971	2,671	14 08	11 93	13 53	19 61	16 95	18 94	38 65	23 89	34 95
Kalkaska	594	1,705	578	1,394	16 32	11 06	12 42	16 77	13 55	14 48	22 55	19 07	20 09
Kent	34,258	8,742	20,026	5,932	14 96	9 05	13 76	25 59	13 34	22 79	43 98	23 09	39 21
Keweenaw	...	2,256	...	1,713		11 30	11 30		14 88	14 88		32 16	32 16
Lake	505	1,158	300	840	11 18	11 73	11 56	14 15	16 18	15 52	41 73	23 70	29 50
Lapeer	2,163	4,645	1,942	3,549	18 09	9 94	12 53	20 15	15 01	15 54	29 63	18 22	22 26
Leelanau	612	2,805	406	1,919	12 76	8 76	9 46	16 76	13 22	13 91	30 84	17 53	20 13
Lenawee	5,241	6,470	4,028	4,693	17 22	11 85	14 25	22 41	16 33	19 14	35 79	22 36	28 57
Livingston	1,049	3,418	950	2,474	[illegible]	12 39	14 25	22 08	17 12	18 65	31 80	23 01	25 43
Luce	600	476	[illegible]	349	18 80	15 74	17 62	21 16	19 67	20 62	37 27	57 57	44 63
Mackinac	840	1,849	590	[illegible]	[illegible]	12 35	12 75	19 41	16 32	17 24	39 51	27 53	31 09
Macomb	4,700	4,930	[illegible]	2,845	12 72	8 50	[illegible]	20 17	14 88	17 55	29 72	21 22	25 55
Manistee	4,544	4,373	2,501	2,782	12 14	8 28	10 24	22 06	13 01	17 29	32 29	20 03	25 84
Marquette	13,052	[illegible]	8,621	1,642	14 27	12 02	13 94	21 61	16 64	20 62	34 22	39 59	35 07
Mason	3,440	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	12 42	11 94	29 96	15 77	24 02
Mecosta	1,874	[illegible]	[illegible]	[illegible]	11 72	9 21	[illegible]	[illegible]	12 72	[illegible]	26 88	17 49	20 59
Menominee	[illegible]	[illegible]	[illegible]	[illegible]	12 50	[illegible]	[illegible]	[illegible]	15 01	15 50	25 12	20 04	23 00

TABLE VIII.—*Concluded.*

Counties.	Number of pupils included in school census in—		Number of pupils enrolled in—		Cost per capita for instruction based on school census in—			Cost per capita for instruction based on enrollment in—			Total expense per capita during year based on enrollment in—		
	Graded school districts.	Ungraded school districts.	Graded school districts.	Ungraded school districts.	Graded school districts.	Ungraded school districts.	All school districts.	Graded school districts.	Ungraded school districts.	All school districts.	Graded school districts.	Ungraded school districts.	All school districts.
Midland	1,348	3,729	1,167	2,645	$13 92	$8 26	$9 79	$16 16	$11 67	$13 04	$26 99	$16 62	$19 79
Missaukee	1,137	2,444	1,000	1,707	13 59	9 63	10 88	15 46	13 78	14 40	21 38	20 00	20 51
Monroe	2,805	6,880	1,581	4,656	10 71	8 44	9 10	19 01	12 48	14 13	75 20	18 98	33 23
Montcalm	3,243	5,918	2,789	4,090	14 89	8 67	10 86	17 31	12 59	14 51	34 07	18 14	24 60
Montmorency	511	613	383	360	11 48	11 16	11 31	15 33	19 01	17 11	45 19	33 82	39 69
Muskegon	8,419	3,625	6,055	2,382	16 24	9 03	14 07	22 59	13 74	20 09	51 22	20 26	42 48
Newaygo	1,585	4,585	1,455	3,251	14 63	9 88	11 10	15 94	13 93	14 55	21 97	20 44	21 84
Oakland	6,653	5,518	5,633	3,774	15 47	11 97	13 88	18 27	17 51	17 96	40 54	23 72	33 79
Oceana	1,463	4,165	1,325	2,989	17 09	9 52	11 49	18 88	13 27	14 99	40 41	19 30	25 79
Ogemaw	1,238	1,940	997	1,345	11 43	9 04	9 97	14 19	13 04	13 53	18 22	20 04	19 26
Ontonagon	2,446	567	2,070	414	19 29	14 89	18 46	22 80	20 39	22 40	37 53	44 85	38 75
Osceola	1,799	3,897	1,404	2,723	15 00	9 16	11 00	19 22	13 11	15 18	26 55	19 34	21 79
Oscoda	....	626	....	521	......	15 72	15 72	......	18 89	18 89	......	25 79	25 79
Otsego	947	1,182	776	866	15 44	10 57	12 73	18 84	14 43	16 51	25 92	22 11	23 91
Ottawa	8,447	5,802	6,302	3,975	11 16	8 46	10 06	14 96	12 35	13 95	22 86	18 45	21 15
Presque Isle	1,519	2,338	1,173	1,187	10 24	7 20	8 40	13 26	14 19	13 73	21 58	23 41	22 00
Roscommon	107	593	95	456	25 23	14 50	16 14	28 42	18 85	20 50	34 14	26 10	27 34
Saginaw	17,241	9,929	9,673	6,164	12 01	7 99	10 51	21 41	12 71	18 03	34 46	18 71	27 38
St. Clair	8,643	6,614	5,103	4,699	11 06	9 29	10 29	18 73	13 08	16 03	29 59	18 68	24 36
St. Joseph	3,304	2,885	2,677	2,052	17 94	13 21	15 73	22 14	18 57	20 59	37 53	26 08	32 56
Sanilac	3,345	7,582	2,798	5,861	12 70	8 92	10 08	15 19	11 53	12 71	27 07	17 62	20 67
Schoolcraft	1,639	1,027	1,066	782	15 31	14 43	14 97	23 54	18 95	21 60	36 08	31 70	34 23
Shiawassee	4,430	4,113	3,597	2,918	15 15	10 45	12 89	18 66	14 73	16 90	27 76	21 08	24 76
Tuscola	3,207	7,146	2,707	4,986	14 62	8 06	10 09	17 32	11 55	13 58	24 64	17 51	20 02
Van Buren	3,912	5,312	3,207	3,617	16 99	9 50	12 68	20 73	13 96	17 14	38 43	20 77	29 07
Washtenaw	6,851	4,669	4,732	3,086	18 37	11 24	15 48	26 59	17 03	22 82	40 44	24 49	34 14
Wayne	132,103	8,464	86,776	4,839	13 56	7 30	13 18	20 65	12 78	20 23	35 82	44 36	36 27
Wexford	3,571	2,772	3,199	1,976	14 75	10 89	13 06	16 47	15 28	16 01	29 27	25 86	27 97

TABLE IX.

Statistics of township and district libraries as reported by township clerks for the year ending July 8, 1912.

Counties.	Number of townships forfeiting library money.	Number of townships maintaining libraries.	Number of volumes added to township libraries during the year.	Whole number of volumes in township libraries.	Amount of taxes voted for township libraries.	Amount of fines, etc., received from county treasurer, for township libraries.	Amount paid for books and care of township libraries.	Amount of township library money on hand, July 8, 1912.	Number of districts maintaining libraries.	Number of volumes added to district libraries during the year.	Whole number of volumes in district libraries.	Amount paid for the support of district libraries.	Amount of fines, etc., received from county treasurer for district libraries.
Totals	922	327	6,783	132,574	$5,419 08	$3,722 33	$11,861 51	$14,420 76	5,750	111,865	1,664,467	$233,850 96	$68,835 63
Alcona	6	5	12	528	......	......	$22 00	$64 07	16	133	1,573	$290 93	$111 03
Alger	......	8	......	......	......	......	......	......	8	164	6,807	186 50	442 05
Allegan	19	5	113	5,034	$150 00	$82 22	131 06	628 08	151	1,748	21,712	1,060 39	59 95
Alpena	5	3	......	......	......	......	......	......	10	100	762	611 97	276 79
Antrim	8	7	......	5,022	250 00	35 99	604 92	403 18	45	544	7,293	371 66	249 35
Arenac	11	......	......	......	......	......	......	......	31	572	6,061	326 82	74 98
Baraga	......	5	......	......	......	......	......	......	5	212	1,947	269 83	50 56
Barry	14	2	......	1,207	......	10 65	35 00	71 20	119	1,062	15,721	650 42	175 46
Bay	8	6	74	4,069	50 00	173 88	179 84	449 05	55	3,733	81,126	380 08	398 08
Benzie	7	5	319	2,470	......	129 38	318 13	75 95	39	412	8,180	339 30	229 83
Berrien	18	2	93	5,291	275 00	5 76	277 28	81 21	132	2,579	31,431	1,031 11	801 14
Branch	13	3	139	2,746	350 00	43 55	269 29	130 63	112	1,572	15,752	1,192 24	782 48
Calhoun	19	1	......	957	......	1 95	64 15	244 00	51	2,759	45,615	4,249 40	185 61
Cass	10	5	883	6,725	1,239 25	59 85	1,726 62	1,208 42	79	640	10,669	223 14	242 70
Charlevoix	11	3	......	851	......	16 67	20 50	60 53	51	615	10,120	2,090 51	129 59
Cheboygan	15	4	93	701	......	26 25	169 50	168 24	51	1,250	14,031	2,194 89	2,477 40
Chippewa	4	10	......	......	......	......	......	......	33	1,472	14,899	475 15	484 77
Clare	15	1	......	367	......	18 70	18 50	98 19	48	759	4,312	323 06	162 00
Clinton	14	2	25	725	......	39 11	41 00	62 86	104	1,351	12,286	865 05	373 05
Crawford	2	3	105	1,791	......	274 22	185 30	197 87	13	36	1,757	24 29	48 65
Delta	11	4	......	240	......	7 24	......	31 30	14	642	5,740	520 21	1,008 37
Dickinson	......	9	......	......	......	......	......	......	9	1,572	19,375	4,248 03	904 54
Eaton	12	4	......	2,258	225 00	69 94	98 00	200 01	29	1,344	21,221	801 57	214 73
Emmet	10	5	300	1,755	......	73 04	125 96	204 78	52	1,466	11,713	533 77	383 55
Genesee	17	1	......	1,265	......	......	......	56 26	147	2,165	33,225	5,069 51	116 08

Gladwin	11	3	200	375		28 98	10 00		45	584	4,342	129 70	439 73
Gogebic	4	4							6	544	4,434	645 93	1,162 53
Grand Traverse	3	10	139	3,567	3 83	133 78	211 31	706 00	41	670	6,662	394 57	172 80
Gratiot	17		120	1,500			95 90	27 07	121	946	21,800	595 95	414 42
Hillsdale	18					7 42		7 42	152	1,583	16,412	854 30	584 89
Houghton	8	6	219	3,153		328 96	269 46	1,234 42	14	3,109	41,052	8,417 25	478 46
Huron	24	3	516	1,296	26 00	28 65	396 41	315 35	108	1,487	13,361	937 20	315 97
Ingham	16								130	3,623	41,109	8,232 66	1,678 19
Ionia	15	1	250	2,457	1,000 00	38 70	1,109 10	346 44	132	1,181	14,815	1,213 79	468 71
Iosco	6	6	122	1,622	100 00	11 22	64 79	108 65	18	229	3,657	52 26	77 87
Iron		7							7	1,515	9,178	2,256 55	1,876 13
Isabella	16								109	1,130	10,026	547 81	582 07
Jackson	19								144	3,942	37,481	2,741 41	1,246 22
Kalamazoo	14	2	43	1,844	50 00	10 50	50 00	98 17	101	2,693	60,157	11,277 97	553 16
Kalkaska	10	1		303		14 57	5 00	78 97	46	301	5,403	196 18	366 18
Kent	22	2	170	1,315	50 00	119 56	145 95	51 18	191	2,861	35,757	2,191 24	899 37
Keweenaw		5							5	339	5,280	520 91	561 86
Lake	7	5	90	2,484			202 00	204 13	19	86	1,418	18 67	26 14
Lapeer	19								133	1,138	19,720	770 56	483 83
Leelanau	7	4		1,717	50 00	23 17	111 02	280 84	35	704	4,667	120 56	27 70
Lenawee	20	2	23	792		40 79	10 48		172	2,422	52,534	5,239 76	4,584 33
Livingston	15	1		320		4 31	5 00	57 21	71	431	7,563	178 08	98 32
Luce		4							4	237	2,273	328 52	20 60
Mackinac	9	5							9	70	3,449	1,799 56	44 12
Macomb	13	2		587		15 62	20 00	166 76	89	1,309	24,483	4,328 36	4,543 55
Manistee	10	4	72	1,604		104 12	98 55	352 02	49	670	8,548	618 83	504 24
Marquette	15	3							18	3,088	42,857	9,814 83	9,510 20
Mason	12	3	78	1,607		54 14	98 42	141 83	52	644	8,495	303 48	183 26
Mecosta	12	4	77	1,000		14 46	61 74	6 93	88	709	10,419	293 56	223 87
Menominee	3	8		400		2 90	50 00	29 35	40	509	9,495	894 31	219 00
Midland	14	2		6		54 06		54 72	49	361	3,769	230 38	138 31
Missaukee	8	6		831		35 24	38 50	189 87	36	379	3,813	197 62	93 36
Monroe	11	4	108	1,493		111 60	47 71	242 23	134	3,584	21,077	1,658 43	1,131 09
Montcalm	16	4	163	2,310		56 07	169 02	156 61	107	773	14,255	476 21	630 53
Montmorency	3	4	120	350		14 62	81 65	39 25	4		668	11 58	68 31
Muskegon	10	7		1,765		178 58	157 58	557 64	75	3,404	57,429	12,726 95	1,917 69
Newaygo	20	4		225		43 28	30 00	49 56	93	1,066	12,824	494 92	482 32
Oakland	20	5	270	8,075	200 00	71 47	431 69	129 37	145	2,523	25,452	2,263 87	1,061 69
Oceana	4	12	340	6,152	50 00	191 44	457 40	271 73	57	873	9,065	208 94	64 13
Ogemaw	9	3	10	1,813		169 81	13 90	161 01	35	524	4,576	277 80	117 78
Ontonagon	6	4							4	231	4,329	238 64	418 29
Osceola	10	6	68	2,745		62 34	236 70	501 70	72	600	10,204	311 37	221 20
Oscoda	2	2		353	50 00		28 00	92 26	6	22	171	4 04	54
Otsego	5	4	214	4,245	200 00	78 46	402 68	425 89	23	330	3,316	181 08	203 29
Ottawa	7	8	211	4,973	50 00	271 05	230 19	528 23	90	2,246	19,690	1,785 47	499 09

TABLE IX.—*Concluded.*

Counties.	Number of townships forfeiting library money.	Number of townships maintaining libraries.	Number of volumes added to township libraries during the year.	Whole number of volumes in township libraries.	Amount of taxes voted for township libraries.	Amount of fines, etc., received from county treasurer, for township libraries.	Amount paid for books and care of township libraries.	Amount of township library money on hand, July 8, 1912.	Number of districts maintaining libraries.	Number of volumes added to district libraries during the year.	Whole number of volumes in district libraries.	Amount paid for the support of district libraries.	Amount of fines, etc., received from county treasurer for district libraries.
Presque Isle	10	4	....	....	....	....	....	....	21	252	2,582	$85 79	$48 75
Roscommon	6	3	111	353	$50 00	$4 30	$66 23	$134 61	10	106	736	....	....
Saginaw	19	8	127	6,415	....	78 15	329 10	489 35	114	2,916	48,950	5,385 61	929 99
St. Clair	23	....	....	....	....	....	....	....	153	2,706	51,893	6,006 29	731 27
St. Joseph	13	8	344	7,736	1,000 00	71 19	1,320 34	828 75	111	667	17,849	358 85	491 80
Sanilac	17	8	6	2,142	....	11 84	58 00	233 36	114	1,554	11,459	614 75	353 74
Schoolcraft	....	9	....	....	....	....	....	....	10	390	4,149	724 42	261 01
Shiawassee	16	....	....	....	....	....	....	....	120	1,429	16,528	958 49	596 96
Tuscola	16	8	197	3,300	....	106 46	206 29	386 84	115	844	12,852	641 87	173 67
Van Buren	15	3	157	1,912	....	9 42	181 22	100 06	145	1,487	26,086	734 21	533 53
Washtenaw	19	1	15	509	....	....	....	....	150	2,755	40,050	5,823 80	481 69
Wayne	20	....	....	....	....	....	....	....	138	11,563	303,231	96,642 22	14,137 43
Wexford	9	7	47	2,926	....	52 70	73 13	199 15	66	644	7,289	553 77	317 71

TABLE X.

Branches of instruction as reported by township clerks for the year ending July 8, 1918.

Counties.	Number of districts in which instruction is given in—												
	Algebra.	Arithmetic.	Civil government.	Geography.	Grammar.	Orthography.	Penmanship.	Physiology.	Reading.	U. S. History.	Agriculture.	Domestic science.	Music.
Totals	1,414	7,165	6,494	7,111	7,052	5,674	5,645	7,013	7,106	6,911	613	395	381
Alcona	16	35	33	35	35	26	29	35	36	36	9	13	7
Alger	5	8	8	8	8	7	7	8	8	8	1	......	1
Allegan	18	183	172	183	181	162	151	182	181	183	3	2	2
Alpena	2	17	13	17	16	7	11	16	16	14	......	......	......
Antrim	21	71	59	70	72	52	56	72	70	68	8	11	8
Arenac	14	43	38	43	40	30	31	42	43	40	3	......	......
Baraga	4	5	5	5	5	5	3	5	5	5	1	......	......
Barry	52	142	135	142	138	119	118	141	140	142	14	20	13
Bay	11	56	62	62	61	34	44	60	61	61	7	2	2
Benzie	15	48	46	48	48	45	27	47	48	48	3	1	1
Berrien	23	141	137	133	142	128	128	138	138	128	3	2	5
Branch	20	125	125	125	125	83	71	124	125	123	18	23	13
Calhoun	36	163	147	169	161	126	128	158	161	158	14	19	13
Cass	14	107	94	108	107	91	97	104	106	103	1	......	5
Charlevoix	11	67	52	67	66	41	49	65	68	64	......	1	5
Cheboygan	9	59	53	59	56	55	48	59	59	58	25	2	5
Chippewa	6	47	39	45	43	35	32	43	43	41	......	1	1
Clare	7	70	60	68	67	60	57	67	70	66	8	......	1
Clinton	15	127	115	127	125	79	77	119	125	123	1	......	1
Crawford	5	24	14	24	22	19	14	22	24	22	......	......	2
Delta	11	21	20	21	21	19	20	21	21	21	1	......	1
Dickinson	8	9	9	9	9	8	9	9	9	9	......	2	2
Eaton	35	142	137	142	142	140	135	141	142	133	15	3	11
Emmet	7	72	56	71	73	55	63	70	72	69	5	1	2
Genesee	30	149	139	151	148	142	107	139	149	144	3	......	3
Gladwin	9	56	47	56	56	48	43	52	56	54	1	1	......
Gogebic	4	9	8	9	9	8	9	9	9	9	3	6	4
Grand Traverse	15	69	62	68	67	57	57	64	69	66	5	2	4
Gratiot	23	140	124	129	130	114	99	129	131	130	8	2	4
Hillsdale	26	157	145	157	156	127	123	155	157	154	8	3	6
Houghton	20	33	30	32	32	27	31	32	32	32	3	8	14
Huron	31	117	113	114	114	89	94	116	117	119	7	1	4
Ingham	18	133	115	130	132	114	120	132	131	121	2	......	1
Ionia	16	138	115	136	136	66	109	131	139	134	2	1	3
Iosco	13	33	27	33	31	24	25	33	32	30	6	8	4
Iron	5	7	7	7	7	7	7	7	7	7	1	2	5
Isabella	14	107	99	104	107	90	76	100	105	104	11	16	7
Jackson	32	153	140	151	152	136	136	148	152	151	3	......	1
Kalamazoo	23	121	113	121	120	112	109	113	118	113	32	......	3
Kalkaska	11	53	49	52	51	36	34	53	52	49	13	......	......
Kent	57	193	193	199	200	184	188	211	200	199	11	12	13
Keweenaw	1	5	5	5	5	5	5	5	5	4	......	......	1
Lake	10	47	38	48	48	36	37	45	45	43	6	8	6
Lapeer	22	132	120	133	133	125	113	133	134	132	5	......	......
Leelanau	9	59	48	59	58	45	36	62	59	56	5	......	2
Lenawee	44	189	171	186	184	155	171	186	188	184	29	......	6
Livingston	32	124	119	129	129	102	104	126	126	121	11	20	14
Luce	1	4	4	4	4	4	4	4	3	4	......	......	......
Mackinac	2	13	14	14	14	14	13	14	14	14	......	......	......
Macomb	28	111	97	111	109	79	84	111	111	110	9	14	11

TABLE X.—*Concluded.*

Counties.	Number of districts in which instruction is given in—												
	Algebra.	Arithmetic.	Civil government.	Geography.	Grammar.	Orthography.	Penmanship.	Physiology.	Reading.	U. S. History.	Agriculture.	Domestic science.	Music.
Manistee	15	71	62	71	71	52	51	69	71	71	8	15	9
Marquette	11	21	21	21	21	21	20	21	21	21	......	7	9
Mason	9	68	65	68	67	60	54	64	67	63	7	......	1
Mecosta	13	107	97	105	107	84	58	106	106	104	11	......	7
Menominee	8	40	30	37	31	28	28	40	40	37	2	3	3
Midland	23	85	81	85	84	68	71	83	84	82	10	11	5
Missaukee	22	60	55	62	62	39	40	59	61	57	13	24	13
Monroe	14	138	132	138	138	125	109	138	139	129	10	......	2
Montcalm	36	140	128	140	136	84	91	136	138	136	14	21	2
Montmorency	6	9	8	9	9	8	7	9	9	9	1	1	......
Muskegon	19	88	79	87	86	83	68	87	85	85	4	6	6
Newaygo	19	124	107	122	120	73	70	120	122	106	8	8	4
Oakland	35	199	161	189	183	135	161	182	187	185	7	1	14
Oceana	10	87	84	91	92	70	61	86	90	89	5	......	2
Ogemaw	7	48	42	49	48	33	35	46	47	47	2	......	......
Ontonagon	8	10	9	10	10	9	10	10	10	10	2	......	3
Osceola	10	95	83	93	95	67	77	91	94	93	1	......	3
Oscoda	1	18	10	18	16	4	10	17	17	17	2	......	......
Otsego	4	35	33	33	30	26	21	32	33	34	2	3	......
Ottawa	26	122	111	120	120	82	86	123	122	121	9	2	4
Presque Isle	12	32	20	31	28	20	23	30	29	28	8	15	7
Roscommon	9	22	15	23	22	21	16	23	23	21	6	8	4
Saginaw	29	165	154	158	155	151	125	159	156	159	9	14	10
St. Clair	24	164	148	154	156	151	153	155	156	142	95	4	3
St. Joseph	15	113	115	120	118	98	110	117	120	117	6	9	9
Sanilac	40	157	151	156	156	153	141	156	156	154	6	10	11
Schoolcraft	3	10	10	10	10	10	10	10	10	10	2	2	1
Shiawassee	20	122	110	121	121	63	94	120	123	117	2	2	3
Tuscola	35	148	135	150	146	86	113	142	149	148	9	6	2
Van Buren	17	151	138	150	147	123	98	149	148	147	11	2	6
Washtenaw	14	159	140	156	154	117	129	158	157	150	5	1	6
Wayne	22	145	125	143	141	104	106	140	145	141	8	13	11
Wexford	17	78	64	72	77	54	60	77	79	74	4	......	4

TABLE XI.

Private and parochial schools for the year ending July 8, 1912.

Counties.	Number of private schools.	Number of parochial schools.	Number of teachers.		Estimated number of pupils.	Counties.	Number of private schools.	Number of parochial schools.	Number of teachers.		Estimated number of pupils.
			Men.	Women.					Men.	Women.	
Totals	51	392	354	1,308	68,391	Kent	6	29	13	176	7,175
						Keweenaw	.....	.....	.....	.....	.....
						Lake	.....	.....	.....	.....	.....
						Lapeer	1	.....	1	.....	25
Alcona	.....	.....	.....	.....	.....	Leelanau	.....	4	2	8	260
Alger	1	.....	1	.....	18						
Allegan	.....	5	1	6	187	Lenawee	.....	7	7	6	380
Alpena	.....	6	3	13	1,000	Livingston	.....	.....	.....	.....	.....
Antrim	.....	1	.....	3	35	Luce	.....	.....	.....	.....	.....
						Mackinac	.....	1	.....	4	100
Arenac	.....	2	2	.....	55	Macomb	.....	14	14	12	1,457
Baraga	.....	.....	.....	.....	.....						
Barry	.....	1	.....	1	10	Manistee	2	11	6	20	1,795
Bay	1	23	24	53	5,151	Marquette	.....	4	.....	31	1,400
Benzie	.....	.....	.....	.....	.....	Mason	.....	5	5	10	554
						Mecosta	1	3	1	6	375
Berrien	1	5	8	20	667	Menominee	.....	4	.....	.....	600
Branch	.....	1	.....	4	96						
Calhoun	.....	5	3	5	483	Midland	.....	.....	.....	.....	.....
Cass	.....	.....	.....	.....	.....	Missaukee	.....	1	.....	2	80
Charlevoix	.....	2	.....	7	250	Monroe	1	12	12	11	998
						Montcalm	.....	2	2	10	190
Cheboygan	.....	3	.....	8	391	Montmorency	.....	1	1	.....	45
Chippewa	.....	2	.....	15	400						
Clare	.....	.....	.....	.....	.....	Muskegon	1	6	5	24	869
Clinton	.....	3	1	10	385	Newaygo	.....	1	.....	1	10
Crawford	.....	.....	.....	.....	.....	Oakland	.....	4	5	11	390
						Oceana	.....	2	1	2	115
Delta	.....	3	1	17	846	Ogemaw	.....	.....	.....	.....	.....
Dickinson	.....	.....	.....	.....	.....						
Eaton	.....	1	.....	1	20	Ontonagon	.....	.....	.....	.....	.....
Emmet	2	1	2	56	330	Osceola	.....	1	1	.....	58
Genesee	1	1	.....	6	220	Oscoda	.....	.....	.....	.....	.....
						Otsego	1	.....	1	.....	30
Gladwin	3	.....	.....	3	60	Ottawa	1	7	7	24	835
Gogebic	.....	2	.....	14	675						
Grand Traverse	.....	3	.....	3	140	Presque Isle	.....	3	2	3	170
Gratiot	.....	2	.....	2	27	Roscommon	.....	.....	.....	.....	.....
Hillsdale	.....	.....	.....	.....	.....	Saginaw	9	29	20	31	1,622
						St. Clair	2	10	4	26	1,470
Houghton	...	13	8	63	3,107	St. Joseph	.....	2	2	.....	40
Huron	.....	11	10	4	614						
Ingham	.....	3	.....	.....	.....	Sanilac	.....	4	4	.....	47
Ionia	.....	4	1	13	260	Schoolcraft	1	1	.....	6	285
Iosco	.....	2	2	.....	136	Shiawassee	1	3	2	4	225
						Tuscola	.....	8	7	5	500
Iron	.....	.....	.....	.....	.....						
Isabella	.....	2	.....	10	440	Van Buren	.....	.....	.....	.....	.....
Jackson	3	6	3	27	918	Washtenaw	1	15	13	12	599
Kalamazoo	...	4	5	21	1,300	Wayne	11	79	141	473	27,346
Kalkaska	.....	.....	.....	.....	.....	Wexford	.....	2	.....	5	125

TABLE XII.

Examination and certification of teachers as reported by

Counties.	Number of public examinations held.	Number of applicants for regular certificates.	Number of applicants for special certificates.	Number of applicants receiving certificates.					Number licensed without experience in teaching.	Number of applicants having received normal school instruction.	Number of applicants having attended institute during year.	Number of teachers holding state certificates.
				County first grade.	Indorsed first grade.	Second grade.	Third grade.	Special.				
Totals..........	173	7,245	594	56	31	1,471	2,856	519	1,590	1,690	3,820	866
Alcona..............	2	62	0	1	1	5	15	0	9	0	14	0
Alger..............	2	23	0	0	0	7	5	0	3	8	0	0
Allegan..............	2	105	13	0	0	28	37	13	23	17	65	5
Alpena..............	2	106	5	0	0	16	41	5	14	1	30	0
Antrim..............	2	48	1	0	0	15	21	1	16	4	26	5
Arenac..............	2	27	0	1	1	6	8	0	4	3	15	3
Baraga..............	2	34	6	0	0	3	17	6	8	22	25	5
Barry..............	2	79	10	1	0	22	19	9	14	35	40	2
Bav..............	2	114	1	1	1	53	43	1	26	12	80	7
Bensie..............	2	48	20	1	1	3	24	20	12	9	23	10
Berrien..............	2	119	12	0	0	41	40	7	11	22	74	14
Branch..............	2	100	6	0	0	9	27	6	13	0	35	0
Calhoun..............	2	159	1	2	2	47	72	1	49	62	79	6
Cass..............	2	56	4	0	0	2	36	4	20	23	30	9
Charlevoix..........	2	41	3	0	0	10	19	3	8	4	12	0
Cheboygan..........	2	27	11	0	0	6	17	11	5	3	17	3
Chippewa..........	2	92	10	0	0	19	38	10	31	8	63	0
Clare..............	2	99	4	0	0	24	30	4	19	18	36	22
Clinton..............	2	61	2	1	1	25	33	2	21	5	58	6
Crawford..........	2	15	7	0	0	3	4	7	9	0	1	2
Delta..............	2	70	5	0	0	18	47	5	36	27	50	28
Dickinson..........	2	25	6	2	1	5	11	6	3	15	8	3
Eaton..............	2	80	8	0	0	10	30	8	12	20	24	25
Emmet..............	2	85	11	0	0	11	36	9	12	7	38	12
Genesee..............	2	145	12	3	2	31	51	12	23	30	76	24
Gladwin..............	2	83	13	0	0	14	24	13	22	8	40	0
Gogebic..............	2	36	15	0	0	4	20	10	15	6	30	0
Grand Traverse......	2	78	4	0	0	10	35	4	17	9	46	6
Gratiot..............	2	104	6	0	0	23	43	6	26	30	112	13
Hillsdale..........	3	256	4	0	0	38	110	4	84	38	140	14
Houghton..........	2	296	59	3	1	68	93	59	25	86	125	84
Huron..............	2	179	2	0	0	26	70	2	23	16	54	8
Ingham..............	2	130	12	0	0	22	60	8	36	40	63	3
Ionia..............	3	162	15	3	0	28	57	11	31	41	69	8
Iosco..............	2	41	3	0	1	7	17	3	11	2	6	3
Iron..............	2	56	9	0	0	3	43	9	12	34	9	66
Isabella..............	2	75	5	0	0	13	22	5	8	35	40	79
Jackson..............	2	232	10	1	1	38	50	8	35	43	76	10
Kalamasoo..........	2	95	3	0	0	20	34	1	20	35	47	2
Kalkaska..........	2	5	3	0	0	2	2	1	0	1	4	2
Kent..............	2	233	2	1	1	52	138	2	72	166	190	15
Keweenaw..........	2	13	0	0	0	2	9	0	2	4	11	1
Lake..............	2	46	1	0	0	12	18	1	14	7	20	0
Lapeer..............	2	71	3	0	0	12	33	1	18	12	43	1
Leelanau..........	2	47	4	0	0	10	27	4	16	2	8	1
Lenawee..........	3	162	9	0	1	32	53	9	49	11	95	2
Livingston..........	2	98	6	0	0	23	37	6	58	50	154	0
Luce..............	2	13	2	0	0	1	8	2	8	0	0	18
Mackinac..........	2	44	4	1	1	12	20	4	6	6	19	1
Macomb..........	2	45	4	1	0	8	17	4	5	7	160	1

TABLE XII.

the county commissioners for the year ending June 30, 1912.

Number of teachers holding State Normal College certificates.	Number of teachers holding Central Normal School certificates.	Number of teachers holding Northern Normal School certificates.	Number of teachers holding Western Normal School certificates.	Number of teachers holding county normal training class certificates.	Number holding certificates issued by county boards of examiners.	Number holding certificates issued by city boards of education.	Number of legally qualified teachers in the county including city teachers.	Number of certificates suspended.	Number of certificates annulled.	Number of certificates transferred.	Number of districts hiring teachers by the year.	Number of new teachers added to teaching force during year.
1,513	576	495	379	2,400	7,927	2,449	19,996	5	3	260	6,306	2,548
0	0	0	0	3	63	0	66	0	0	4	39	11
3	0	27	0	0	27	0	65	0	1	0	8	0
28	3	1	62	91	164	0	354	2	2	9	180	40
1	2	0	0	1	80	0	139	0	0	1	61	20
26	13	0	6	45	59	0	149	0	0	3	72	50
8	0	0	0	27	35	0	73	0	0	2	5	24
4	1	12	1	0	28	0	52	0	0	1	5	5
17	3	0	17	90	106	3	236	0	0	2	135	40
0	3	0	0	8	88	206	324	0	0	0	70	30
18	17	0	2	31	97	0	153	0	0	5	....	26
62	11	0	21	57	169	26	381	0	0	7	130	48
25	1	0	8	64	70	5	244	0	0	5	100	49
10	3	0	12	88	189	50	450	1	0	7	155	37
19	1	0	23	66	90	9	227	0	0	2	109	50
19	38	1	0	50	88	0	208	0	0	2	63	18
21	6	1	3	93	47	15	189	0	0	4	94	52
3	1	7	1	0	95	0	175	0	0	8	88	40
2	18	0	1	0	88	0	112	0	0	1	47	24
25	11	0	0	59	59	8	190	0	0	0	100	32
4	6	0	0	5	17	0	39	0	0	3	10	2
11	2	46	0	0	82	5	174	0	0	2	21	35
3	3	11	1	1	25	111	159	0	0	3	7	14
54	10	0	14	56	69	11	247	0	0	6	130	84
22	6	0	2	12	91	12	166	0	0	12	25	....
8	12	0	2	73	200	150	380	0	0	5	135	55
3	4	0	0	0	65	0	86	0	0	2	60	15
12	11	18	13	4	50	85	193	0	0	3	7	8
2	4	0	0	7	35	2	181	0	0	1	65	18
20	41	0	0	62	141	8	285	0	0	1	100	60
5	2	0	2	0	151	13	319	0	0	3	142	84
91	5	108	9	0	330	8	694	0	0	6	32	4
12	40	0	3	1	161	0	224	0	0	2	5	50
20	5	0	1	40	156	156	345	0	0	6	120	67
21	6	0	1	61	192	57	346	0	0	0	80	49
8	5	0	2	30	35	0	83	0	0	0	28	21
16	1	32	1	0	54	0	131	0	0	3	7	50
2	71	0	1	0	98	5	187	0	0	4	46	35
7	2	0	1	2	152	....	338	0	0	14	43	50
16	0	0	52	3	110	65	391	0	0	2	112	25
5	7	0	0	41	14	0	76	0	0	6	45	30
25	5	0	17	7	358	540	966	0	0	2	125	75
6	3	16	0	0	16	0	46	0	0	3	17	0
7	0	0	3	0	28	0	56	0	0	1	15	21
33	0	0	0	37	137	0	203	0	0	4	111	40
8	8	0	0	1	104	0	122	0	0	0	55	16
20	5	0	0	7	94	24	347	0	0	5	190	56
38	2	0	0	2	152	0	249	0	0	1	109	58
3	0	8	0	7	15	0	35	0	0	2	17	13
5	3	5	0	2	58	2	76	0	0	5	14	10
59	0	0	0	56	63	9	205	0	0	1	113	24

TABLE XII.—*Concluded.*

Counties.	Number of public examinations held.	Number of applicants for regular certificates.	Number of applicants for special certificates.	Number of applicants receiving certificates.					Number licensed without experience in teaching.	Number of applicants having received normal school instruction.	Number of applicants having attended institute during year.	Number of teachers holding state certificates.
				County first grade.	Indorsed first grade.	Second grade.	Third grade.	Special.				
Manistee	2	49	1	1	1	11	14	1	10	17	199	5
Marquette	2	65	14	0	0	4	23	14	19	15	19	34
Mason	2	44	2	0	0	14	14	2	6	0	20	15
Mecosta	2	132	12	2	2	20	33	0	18	2	40	5
Menominee	2	40	12	0	0	14	14	12	4	0	24	11
Midland	2	33	3	1	1	9	14	2	3	18	24	4
Missaukee	2	73	7	0	0	12	29	3	16	4	35	20
Monroe	3	142	0	0	0	32	61	2	18	52	95	1
Montcalm	2	149	4	1	1	14	90	4	49	24	18	2
Montmorency	2	28	1	0	0	4	10	1	5	0	15	1
Muskegon	2	58	3	0	0	11	13	3	9	1	24	2
Newaygo	2	108	21	0	0	35	28	21	13	21	74	2
Oakland	2	155	6	1	1	35	60	6	45	20	44	12
Oceana	2	80	12	1	1	21	41	12	20	6	20	6
Ogemaw	2	62	6	0	0	12	23	6	9	4	25	0
Ontonagon	2	47	18	0	0	14	15	14	10	15	12	2
Osceola	2	71	1	0	0	22	16	1	13	16	21	6
Oscoda	2	29	1	0	0	4	7	1	1	0	8	2
Otsego	2	27	7	0	0	5	11	5	7	5	0	16
Ottawa	2	85	3	1	0	15	31	3	22	17	15	0
Presque Isle	2	45	2	0	0	4	20	2	6	0	26	0
Roscommon	3	9	7	0	0	0	6	7	6	0	6	1
Saginaw	2	122	18	1	0	20	39	13	8	0	30	0
St. Clair	2	107	5	0	0	14	51	5	28	28	17	1
St. Joseph	2	116	3	1	1	19	57	3	28	7	95	30
Sanilac	2	178	15	0	0	42	54	0	26	50	29	80
Schoolcraft	2	39	1	0	0	6	11	1	1	5	4	1
Shiawassee	2	88	18	0	0	10	46	13	31	42	65	3
Tuscola	2	144	7	7	1	35	66	7	44	13	50	44
Van Buren	2	87	6	0	0	19	24	6	7	39	45	2
Washtenaw	2	171	7	0	3	31	79	7	48	90	95	2
Wayne	2	166	12	16	3	56	56	12	26	120	120	23
Wexford	2	76	3	0	0	8	30	3	20	15	26	4

TABLE XII.—*Concluded.*

Number of teachers holding State Normal College certificates.	Number of teachers holding Central Normal School certificates.	Number of teachers holding Northern Normal School certificates.	Number of teachers holding Western Normal School certificates.	Number of teachers holding county normal training class certificates.	Number holding certificates issued by county board of examiners.	Number holding certificates issued by city boards of education.	Number of legally qualified teachers in the county including city teachers.	Number of certificates suspended.	Number of certificates annulled.	Number of certificates transferred.	Number of districts hiring teachers by the year.	Number of new teachers added to teaching force during year.
2	12	1	2	36	60	....	175	1	0	2	70	5
21	0	166	0	0	46	40	321	0	0	3	21	25
20	5	0	1	46	55	18	200	0	0	1	60	25
2	2	0	0	53	94	....	152	0	0	0	60	40
0	0	3	0	45	64	68	200	0	0	2	35	5
6	13	0	1	70	44	2	140	0	0	2	50	25
5	14	1	0	0	80	0	100	0	0	2	56	20
28	4	0	1	2	164	6	206	0	0	3	139	33
24	15	0	0	46	199	5	286	0	0	2	140	40
4	1	0	0	9	15	0	40	0	0	4	10	0
11	1	0	4	50	92	143	305	0	0	3	91	5
14	2	0	3	97	134	0	261	0	0	3	119	57
100	3	0	0	63	102	19	424	0	0	5	105	55
33	4	0	2	52	62	0	194	0	0	6	82	20
4	4	0	0	6	61	0	76	0	0	0	48	11
12	7	12	0	0	65	0	105	0	0	4	82	12
12	11	0	3	79	101	0	211	0	0	0	91	42
2	0	0	0	9	36	0	47	0	0	3	15	0
7	9	0	0	19	36	0	71	0	0	2	33	10
25	0	0	16	50	172	0	326	0	0	2	122	35
....	....	0	0	3	50	22	72	0	0	0	6	0
2	0	0	0	5	27	0	35	0	0	12	28	....
21	3	0	1	65	77	67	331	0	0	0	152	40
24	2	0	14	2	185	18	268	0	0	5	112	60
15	16	0	....	77	....	278	416	0	0	1	125	50
30	2	0	5	44	116	0	285	0	0	2	150	28
....	....	23	....	1	30	4	71	0	0	3	9	....
12	11	0	0	35	158	20	281	0	0	8	97	50
26	9	0	0	54	216	0	314	0	0	2	136	50
31	0	0	60	29	106	5	282	1	0	4	149	40
40	0	0	0	2	117	93	345	0	0	3	165	48
135	13	1	2	5	211	0	2,127	0	0	4	149	....
5	12	0	0	56	57	56	193	0	0	1	62	62

TABLE XIII.

Miscellaneous statistics as reported by the county commissioners for the year ending June 30, 1912.

Counties.	Number of meetings of county teachers' associations.	Number of other teachers' meetings.	Number of days devoted to meetings of county boards.	Amount allowed by board of supervisors for stationery, etc.	Amount of compensation received by the members of the board, other than the commissioner.	Salary of the commissioner.	Amount of institute fees collected.	Number of districts visited by the commissioner during the year.	Number of visits made by commissioner and assistant visitor during the year.	Number of districts in which the compulsory attendance law is enforced.
Totals............	126	375	819	$15,587 68	$20,504 48	$98,991 00	$11,207 00	7,580	12,642	7,044
Alcona.............	2	0	12	$30 00	$92 00	$500 00	$49 50	39	56	39
Alger.............	0	1	0	20 88	218 63	500 00	20 00	8	58	3
Allegan.............	1	0	7	176 24	448 80	1,500 00	209 00	175	200	185
Alpena.............	0	1	7	67 39	152 00	1,000 00	79 50	69	97	0
Antrim.............	1	0	3	....	143 00	1,200 00	75 00	72	110	72
Arenac.............	2	0	12	....	96 00	750 00	36 00	43	105	43
Baraga.............	1	0	3	21 50	180 00	650 00	46 00	5	100	5
Barry.............	2	8	8	140 00	240 00	1,500 00	127 50	141	200	141
Bay.............	3	0	6	....	212 00	1,200 00	217 00	70	200	70
Benzie.............	2	3	4	159 41	236 00	700 00	63 50	53	53	53
Berrien.............	1	2	11	365 75	336 00	1,500 00	226 50	140	249	125
Branch.............	3	......	8	400 00	200 00	1,200 00	121 50	126	230	126
Calhoun.............	1	53	8	....	268 00	1,800 00	237 50	166	283	165
Cass.............	1	1	3	313 96	267 00	1,200 00	123 50	109	150	112
Charlevoix.............	1	0	3	225 00	250 00	1,200 00	83 50	66	140	70
Cheboygan.............	1	5	10	200 00	158 00	1,200 00	76 00	74	104	74
Chippewa.............	1	10	7	200 00	224 00	1,500 00	109 50	83	87	88
Clare.............	1	0	8	300 00	98 00	1,100 00	83 50	62	102	72
Clinton.............	16	16	10	250 00	282 00	1,500 00	119 50	129	200	129
Crawford.............	0	0	3	....	88 00	300 00	24 50	9	12	25
Delta.............	0	0	7	492 00	112 00	1,200 00	108 00	65	140	65
Dickinson.............	0	0	4	100 00	16 00	1,200 00	90 50	7	100	7
Eaton.............	0	0	2	300 45	162 25	1,500 00	138 00	137	260	140
Emmet.............	1	1	7	95 00	276 65	1,200 00	84 50	67	116	73
Genesee.............	3	10	12	260 00	400 00	1,500 00	265 50	153	220	153
Gladwin.............	2	2	9	150 00	180 00	500 00	54 00	50	56	58
Gogebic.............	1	4	10	71 03	60 00	600 00	110 00	7	100	7
Grand Traverse.........	......	......	10	....	159 63	1,200 00	105 50	68	72	68
Gratiot.............	2	0	9	450 00	260 00	1,500 00	193 00	131	260	131
Hillsdale.............	1	32	5	165 96	262 00	1,500 00	222 00	160	277	160
Houghton.............	2	0	3	125 00	210 00	2,141 00	459 50	32	93	33
Huron.............	5	5	9	200 00	264 00	1,500 00	....	125	175	125
Ingham.............	1	0	54	250 00	217 00	1,500 00	226 00	132	240	136
Ionia.............	4	5	11	300 00	464 00	1,500 00	178 50	141	205	141
Iosco.............	1	0	8	200 00	194 00	1,000 00	48 50	31	86	31
Iron.............	......	......	6	....	80 00	700 00	74 50	30	32	27
Isabella.............	1	3	9	187 67	308 00	1,400 00	106 50	102	145	109
Jackson.............	1	16	74	260 00	289 15	2,000 00	213 50	183	247	....
Kalamazoo.............	1	8	5	104 40	350 00	1,500 00	177 00	130	150	....
Kalkaska.............	1	5	3	200 00	120 00	1,000 00	23 50	51	105	50
Kent.............	4	13	52	1,575 32	900 00	2,000 00	562 50	168	375	205
Keweenaw.............	......	......	2	50 00	48 00	400 00	24 50	17	24	17
Lake.............	0	0	12	110 50	96 00	560 00	37 00	46	85	0
Lapeer.............	2	0	3	250 00	408 00	1,400 00	149 50	133	194	133
Leelanau.............	1	0	2	77 70	96 00	700 00	40 50	57	74	59
Lenawee.............	1	1	12	....	500 00	1,500 00	225 00	195	250	175
Livingston.............	0	0	3	121 22	140 00	1,200 00	107 50	136	170	135
Luce.............	0	2	3	91 71	94 00	250 00	21 50	17	40	17
Mackinac.............	0	0	11	108 00	142 00	1,000 00	32 00	59	78	14
Macomb.............	1	3	8	275 00	189 00	1,600 00	90 00	113	195	14

TABLE XIII.—*Concluded.*

Counties.	Number of meetings of county teachers' associations.	Number of other teachers' meetings.	Number of days devoted to meetings of county boards.	Amount allowed by board of supervisors for stationery, etc.	Amount of compensation received by the members of the board, other than the commissioner.	Salary of the commissioner.	Amount of institute fees collected.	Number of districts visited by the commissioner during the year.	Number of visits made by commissioner and assistant visitor during the year.	Number of districts in which the compulsory attendance law is enforced.
Manistee	2	2	3	$70 00	$360 00	$1,000 00	$81 50	71	98	68
Marquette	0	4	4	346 83	176 00	1,800 00	187 00	61	211	61
Mason	2	6	9	175 00	221 50	1,200 00	88 50	68	100	68
Mecosta	5	5	....	....	150 00	1,200 00	179 00	107	150	108
Menominee	1	3	12	85 69	32 00	1,740 00	96 00	34	140	35
Midland	1	0	4	72 04	208 00	1,200 00	65 00	82	120	83
Missaukee	2	0	6	164 00	216 00	1,100 00	69 00	63	74	65
Monroe	6	3	34	....	272 00	1,500 00	66 00	139	208	139
Montcalm	0	1	6	200 00	396 00	1,500 00	136 50	142	170	142
Montmorency	2	4	10	....	80 00	600 00	25 00	10	87	10
Muskegon	0	2	48	323 71	384 00	1,200 00	164 00	92	157	94
Newaygo	3	3	7	300 57	272 00	1,200 00	142 50	123	205	127
Oakland	0	1	12	107 00	708 00	1,500 00	242 00	200	340	200
Oceana	1	1	5	91 72	394 21	1,200 00	120 50	95	162	95
Ogemaw	0	0	2	....	118 00	500 00	60 00	49	63	49
Ontonagon	2	0	3	35 01	120 00	800 00	57 50	92	170	94
Osceola	0	5	3	281 00	214 00	1,200 00	150 00	97	140	97
Oscoda	0	39	8	24 81	154 41	250 00	29 50	29	30	18
Otsego	0	0	3	19 81	176 00	500 00	13 50	33	40	35
Ottawa	8	8	13	122 40	438 75	1,500 00	162 50	122	182	123
Presque Isle	0	0	17	33 00	168 00	500 00	41 50	36	54	36
Roscommon	0	0	7	96 46	26 00	450 00	12 00	22	22	28
Saginaw	1	1	2	1,200 00	250 00	1,500 00	....	152	205	152
St. Clair	1	2	3	175 59	190 00	1,500 00	160 50	123	168	123
St. Joseph	4	2	23	....	500 00	1,500 00	224 50	163	280	163
Sanilac	1	25	3	....	668 50	1,500 00	362 00	169	175	160
Schoolcraft	0	0	6	81 35	168 00	1,100 00	49 50	9	157	9
Shiawassee	2	8	4	200 00	344 00	1,500 00	145 00	124	186	124
Tuscola	1	4	9	560 60	520 00	1,500 00	194 00	151	160	153
Van Buren	1	18	3	400 00	316 00	1,500 00	174 00	149	239	149
Washtenaw	1	2	3	....	264 00	2,000 00	229 50	160	263	165
Wayne	2	......	13	680 00	524 00	2,000 00	1,085 00	149	400	100
Wexford	1	16	36	300 00	288 00	1,000 00	97 00	82	186	82

TABLE XIV.

Condition of schools and schoolhouses as reported by the county commissioners for the year ending June 30, 1912.

Counties.	Number of schools supplied with dictionaries.	Number of schools supplied with maps.	Number of schools supplied with globes.	Number of schoolhouses properly heated and ventilated.	Number of schools having uniform textbooks in each branch.	Number of schools having a prescribed course of study.	Number of schools properly classified.	Number of schools in which physiology, etc., is taught.	Number of districts that have adopted textbooks in physiology.	Number of districts in which communicable diseases are taught according to law.	Number of townships organized as township districts.	Number of districts furnishing free textbooks.	Number of pupils in eighth grade exclusive of graded schools.	Number of eighth grade diplomas granted.
Totals.........	7,520	7,185	7,007	3,106	6,450	3,528	6,575	7,679	6,983	7,337	201	1,240	17,667	10,450
Alcona............	39	39	39	4	39	39	35	39	39	39	39	26	60	25
Alger............	58	58	58	58	0	1	58	58	8	8	8	8	30	22
Allegan............	185	180	180	175	185	11	165	185	185	185	1	8	600	340
Alpena............	65	53	43	1	70	70	22	70	70	70	6	1	93	20
Antrim............	72	72	72	8	0	72	72	72	72	72	2	5	110	57
Arenac............	39	43	39	6	40	5	43	43	43	43	0	16	100	120
Baraga............	29	29	29	6	29	5	5	5	5	5	5	5	60	28
Barry............	140	135	130	12	130	140	130	141	141	141	0	4	400	212
Bay............	70	63	63	35	70	70	63	70	63	70	1	35	300	200
Benzie............	53	53	53	53	......	......	53	......	......	......	1	......	91	102
Berrien............	137	135	136	22	136	136	136	140	140	140	0	9	332	209
Branch............	105	109	100	60	112	126	126	126	126	63	0	0	265	161
Calhoun............	162	155	145	50	150	160	125	160	165	165	0	11	325	185
Cass............	90	86	89	80	95	104	109	112	112	112	0	0	216	86
Charlevoix............	70	70	70	33	64	4	50	70	70	70	0	40	202	136
Cheboygan............	90	89	92	39	94	16	85	94	......	74	4	58	131	80
Chippewa............	86	93	67	12	28	80	40	88	88	70	10	72	90	81
Clare............	64	62	62	6	60	5	72	72	72	72	0	33	130	85
Clinton............	129	129	100	129	129	129	129	129	129	129	0	2	300	133
Crawford............	22	23	20	......	11	1	15	22	13	24	0	7	30	13
Delta............	75	68	68	50	80	2	64	94	65	65	11	15	......	88
Dickinson............	48	48	48	46	48	48	48	48	48	48	7	7	65	49
Eaton............	134	130	123	16	140	......	50	140	140	140	0	8	357	107
Emmet............	73	73	73	18	73	......	......	73	73	73	0	8	......	106
Genesee............	153	85	132	30	130	14	135	153	153	140	0	4	280	276
Gladwin............	58	50	50	50	50	......	50	58	58	58	2	15	150	66
Gogebic............	7	7	7	7	7	7	7	7	7	7	7	6	45	36
Grand Traverse....	68	68	66	7	68	7	68	68	68	68	0	10	183	116
Gratiot............	128	118	110	26	125	131	131	131	131	131	0	3	500	140
Hillsdale............	160	152	157	142	156	150	......	160	160	160	0	0	303	185
Houghton............	33	33	33	59	40	12	50	50	22	32	5	14	66	41
Huron............	125	112	112	62	125	125	125	125	125	125	0	20	280	162
Ingham............	136	118	117	20	130	11	110	136	136	......	0	1	235	107
Ionia............	139	136	125	10	130	141	141	141	141	141	0	0	350	192
Iosco............	35	35	35	10	35	8	25	35	31	35	1	23	62	94
Iron............	38	38	38	32	29	29	29	38	38	38	7	5	27	6
Isabella............	109	102	104	38	109	......	109	109	109	109	0	4	232	162
Jackson............	143	135	118	6	150	150	156	156	156	150	0	0	306	179
Kalamazoo............	110	115	112	......	......	......	......	130	130	130	1	2	350	171
Kalkaska............	50	48	49	6	57	46	50	57	57	50	0	40	140	80
Kent............	205	185	200	60	205	205	205	205	205	205	0	2	800	504
Keweenaw............	17	17	17	17	17	6	17	17	17	17	4	0	12	26
Lake............	44	44	29	1	9	3	36	44	44	46	0	22	82	38
Lapeer............	112	92	127	17	78	11	106	133	133	133	0	0	378	264
Leelanau............	59	59	59	15	56	59	59	59	59	59	0	4	111	94
Lenawee............	185	180	178	40	135	......	150	......	180	180	0	0	325	240
Livingston............	117	111	124	10	71	4	120	139	139	139	0	0	255	59
Luce............	17	17	17	17	17	17	17	17	17	17	4	17	22	12
Mackinac............	57	51	49	18	47	30	48	59	14	14	12	11	54	40
Macomb............	113	90	75	100	100	20	100	113	113	113	0	2	205	42

TABLE XIV.—*Concluded.*

Counties.	Number of schools supplied with dictionaries.	Number of schools supplied with maps.	Number of schools supplied with globes.	Number of schoolhouses properly heated and ventilated.	Number of schools having uniform textbooks in each branch.	Number of schools having a prescribed course of study.	Number of schools properly classified.	Number of schools in which physiology, etc., is taught.	Number of districts that have adopted textbooks in physiology.	Number of districts in which communicable diseases are taught according to law.	Number of township organized as township districts.	Number of districts furnishing free textbooks.	Number of pupils in eighth grade exclusive of graded schools.	Number of eighth grade diplomas granted.
Manistee	71	71	71	54	0	2	71	71	65	71	0	25	232	82
Marquette	61	61	61	61	61	61	61	61	61	61	18	18	155	47
Mason	65	60	60	15	68	68	68	68	68	68	0	12	198	128
Mecosta	......	......	......	30	54	5	81	108	108	108	1	25	266	185
Menominee	35	35	35	......	24	35	35	35	35	35	7	37	128	72
Midland	71	71	65	40	66	50	70	83	83	83	0	15	173	101
Missaukee	65	65	50	16	42	4	60	65	65	65	0	62	132	104
Monroe	139	139	129	83	139	0	139	139	2	139	0	0	396	200
Montcalm	142	142	142	8	142	142	142	142	142	142	0	3	400	251
Montmorency	40	40	40	20	40	30	30	40	10	10	7	10	20	25
Muskegon	94	94	79	40	89	94	89	94	94	94	0	46	232	121
Newaygo	121	117	117	35	120	15	124	127	127	127	0	27	251	142
Oakland	194	190	188	......	180	25	195	195	......	195	0	0	334	182
Oceana	80	75	82	80	95	32	93	95	95	95	0	12	201	97
Ogemaw	45	35	44	3	28	9	49	54	46	49	2	18	79	21
Ontonagon	80	76	70	60	80	94	60	94	94	94	11	6	45	13
Osceola	92	78	88	21	97	......	97	97	97	97	0	32	334	160
Oscoda	28	24	21	0	27	0	23	31	17	19	2	16	48	4
Otsego	35	34	34	20	32	4	......	35	35	35	1	12	41	37
Ottawa	122	123	122	118	123	117	120	123	120	123	0	41	394	275
Presque Isle	57	57	42	10	39	3	34	45	......	36	5	26	24	37
Roscommon	28	22	0	25	0	20	28	28	28	28	0	20	16	15
Saginaw	152	152	148	152	152	152	152	152	152	152	0	30	220	139
St. Clair	118	115	105	80	80	8	80	123	115	123	0	0	179	87
St. Joseph	156	158	160	125	160	20	163	163	163	163	0	70	550	410
Sanilac	160	160	155	100	140	6	130	169	169	169	0	3	300	264
Schoolcraft	30	30	28	30	30	30	30	30	9	9	9	5	63	49
Shiawassee	120	120	100	10	96	10	65	123	124	123	0	1	529	202
Tuscola	148	125	125	50	140	......	10	153	153	153	0	4	500	309
Van Buren	149	145	145	15	......	......	145	149	......	100	0	2	345	219
Washtenaw	165	165	165	10	165	0	165	165	165	165	0	0	368	203
Wayne	125	131	119	60	......	......	145	149	149	149	0	11	266	167
Wexford	79	82	78	16	82	82	82	82	82	82	0	68	208	125

TABLE XV.

Showing the extent to which physiology was taught in the schools of the State during the year ending July 8, 1912, as compiled from directors' reports.

Counties.	Number of districts in county.	Number of districts reporting physiology taught.	Number of districts reporting physiology not taught.	Number of districts not reporting.
Totals	7,367	6,588	88	691
Alcona	38	29	1	8
Alger	8	8	....	....
Allegan	190	166	6	18
Alpena	20	18	1	1
Antrim	72	69	....	3
Arenac	43	39	....	4
Baraga	5	5	....	....
Barry	142	124	2	16
Bay	71	59	1	11
Benzie	53	50	....	3
Berrien	147	128	2	17
Branch	127	114	....	13
Calhoun	165	139	3	23
Cass	112	99	1	12
Charlevoix	68	57	1	11
Cheboygan	59	55	....	4
Chippewa	49	43	....	6
Clare	71	58	2	11
Clinton	129	113	3	13
Crawford	25	21	....	4
Delta	21	19	....	2
Dickinson	9	8	....	1
Eaton	142	142	....	....
Emmet	73	63	1	9
Genesee	155	132	3	20
Gladwin	57	48	1	8
Gogebic	9	8	....	1
Grand Traverse	69	59	2	8
Gratiot	132	110	5	17
Hillsdale	163	136	3	24
Houghton	35	29	1	5
Huron	126	118	1	7
Ingham	137	131	1	5
Ionia	141	140	....	1
Iosco	34	29	....	5
Iron	7	6	....	1
Isabella	109	103	1	5
Jackson	153	141	....	12
Kalamazoo	128	107	3	18
Kalkaska	51	42	....	9
Kent	205	186	1	18
Keweenaw	5	5	....	....
Lake	50	42	....	8
Lapeer	134	116	2	16
Leelanau	59	50	4	5
Lenawee	195	175	2	18
Livingston	134	116	2	16
Luce	4	4	....	....
Mackinac	14	14	....	....
Macomb	113	92	4	17
Manistee	71	66	1	4
Marquette	21	20	....	1
Mason	68	61	1	6
Mecosta	111	100	1	10
Menominee	43	38	....	5

TABLE XV.—*Concluded.*

Counties.	Number of districts in county.	Number of districts reporting physiology taught.	Number of districts reporting physiology not taught.	Number of district not reporting.
Midland	84	81	2	1
Missaukee	65	57	....	8
Monroe	139	112	2	25
Montcalm	142	129	1	12
Montmorency	9	9	....	....
Muskegon	92	79	2	11
Newaygo	127	113	2	12
Oakland	201	177	1	23
Oceana	95	92	1	2
Ogemaw	49	48	....	1
Ontonagon	10	10	....	....
Osceola	96	91	1	4
Oscoda	19	15	1	3
Otsego	37	33	....	4
Ottawa	125	117	....	8
Presque Isle	35	31	....	4
Roscommon	29	24	....	5
Saginaw	165	147	1	17
St. Clair	156	155	....	1
St. Joseph	123	110	2	11
Sanilac	159	156	1	2
Schoolcraft	10	10	....	....
Shiawassee	124	123	1	....
Tuscola	153	135	....	18
Van Buren	150	132	2	16
Washtenaw	166	148	3	15
Wayne	151	129	1	21
Wexford	83	75	1	7

TABLE XVI.

Graded school statistics compiled from township clerks'

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Totals		491,293	344,730	116,382	85	$32,431,660	$8,305,055 44	1,398	8,709
Ada	Kent	104	83	180	85	$3,000	$750 00	1	3
Addison	Lenawee	140	141	180	94	15,000	7,800 00	2	4
Adrian	Lenawee	2,554	1,718	190	95	250,000	75,000 00	7	51
Akron	Tuscola	194	184	200	80	3,000	....	1	3
Alabaster	Iosco	133	122	180	68	4,000	....	1	2
Alanson	Emmet	194	173	179	85	7,500	....	1	5
Alba	Antrim	146	121	180	71	7,500	....	1	3
Albert Tp	Montmorency	181	110	160	95	6,000	500 00	1	6
Albion	Calhoun	1,466	1,308	185	95	100,000	45,822 83	4	33
Alden	Antrim	108	102	180	76	4,700	872 75	1	2
Algonac	St. Clair	473	330	170	77	25,000	5,750 00	1	11
Allegan	Allegan	904	759	190	79	75,000	....	3	22
Allendale Tp. 1	Ottawa	91	73	180	89	1,500	100 00	1	1
Alma	Gratiot	853	766	196	95	150,000	79,937 83	4	20
Almont	Lapeer	219	197	189	92	10,000	3,410 16	2	6
Alpena	Alpena	3,812	1,927	189	95	80,000	....	8	48
Ann Arbor	Washtenaw	3,619	2,429	188	96	425,000	209,825 08	13	80
Applegate	Sanilac	83	56	180	66	1,600	130 86	1	2
Arcadia	Manistee	229	153	180	84	8,000	6,762 88	1	5
Armada	Macomb	192	179	190	95	10,000	1,200 00	2	8
Ashley	Gratiot	181	151	198	91	3,000	....	......	5
Athens	Calhoun	174	144	180	96	35,000	20,150 00	2	6
Atlantic Mine	Houghton	2,511	1,877	200	93	219,000	80,000 00	7	46
Attica	Lapeer	103	90	200	78	1,200	105 57	1	2
Auburn	Bay	290	233	180	69	7,000	3,000 00	......	4
Augusta	Kalamazoo	139	124	190	76	5,000	....	1	5
Au Sable	Iosco	86	55	170	75	3,000	....	......	2
Bad Axe	Huron	592	454	190	93	15,000	41,373 37	2	12
Bainbridge	Berrien	114	96	180	88	1,800	200 00	2	1
Bainbridge Tp. 5	Berrien	96	94	160	71	3,300	1,650 00	2	2
Baldwin	Lake	148	129	180	81	12,000	6,825 00	1	4
Baldwin Tp	Delta	267	197	180	73	16,400	7,000 00	1	4
Bancroft	Shiawassee	124	117	200	95	10,000	298 11	1	4
Bangor	Van Buren	357	326	190	94	25,000	....	3	7
Baraga	Baraga	1,265	821	200	80	75,100	42,945 35	7	14
Baroda	Berrien	208	152	160	80	6,000	....	1	4
Barryton	Mecosta	150	153	190	72	10,000	....	1	3
Bath	Clinton	95	73	180	90	6,000	120 00	2	3
Battle Creek	Calhoun	6,188	4,810	183	95	820,000	31,000 00	17	126
Bay City	Bay	12,958	7,085	187	97	662,116	107,000 00	23	185
Bay Port	Huron	143	109	180	73	6,000	5,950 00	1	11
Bear Lake	Manistee	154	148	180	97	7,500	1,260 00	1	5
Beaverton	Gladwin	267	247	163	70	14,000	8,400 00	2	6
Belding	Ionia	803	638	200	96	52,000	45,917 53	2	23
Bellaire	Antrim	319	319	180	89	25,000	6,800 00	2	9
Belleville	Wayne	144	139	200	91	12,000	100 00	1	4
Bellevue	Eaton	251	217	200	94	1,500	....	2	7
Benton Harbor	Berrien	2,191	1,919	180	94	150,000	38,000 00	5	47
Benzonia	Benzie	304	277	180	88	1,265	8,160 00	1	6
Berlamont	Van Buren	76	61	180	88	1,500	....	1	1
Berlin	Ottawa	122	102	180	94	9,200	6,880 01	1	3
Berlin Tp. 3 fr	Ionia	79	48	180	77	1,680	....	......	2
Berrien Springs	Berrien	204	168	180	91	8,000	4,000 00	1	8
Bessemer	Gogebic	1,510	1,119	200	94	152,000	60,930 30	2	40
Big Rapids	Mecosta	1,099	814	196	96	100,000	....	5	25

TABLE XVI.

reports for the year ending July 8, 1912.

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
13,564	87,611	$1,415,926 60	$5,525,810 89	$104 39	$63 07	$6,941,737 49	$13,065,361 00	16,343	$254,766 99
9	27	$720 00	$1,170 00	$80 00	$43 33	$1,890 00	$2,516 72	9	$170 00
18	36	1,460 00	1,737 00	81 11	48 25	3,197 00	5,069 45	53	585 00
67	474	9,797 00	31,542 62	146 22	66 54	41,339 62	71,181 93	127	3,330 30
10	30	750 00	1,250 00	75 00	41 66	2,000 00	3,927 18	32	303 20
9	18	585 00	720 00	65 00	40 00	1,305 00	2,604 52	1	9 00
9	36	810 00	1,755 00	90 00	48 75	2,565 00	3,364 77	7	45 00
9	27	630 00	1,278 00	70 00	47 33	1,908 00	2,858 28	1	4 50
10	54	750 00	2,170 00	75 00	40 18	2,920 00	5,608 34	2	....
38	361	3,665 00	18,589 50	96 44	51 49	22,254 50	56,218 50	52	758 50
9	18	630 00	900 00	70 00	50 00	1,530 00	2,327 98	7	90 00
9	99	1,200 00	5,040 00	133 33	50 90	6,240 00	9,266 71	9	130 00
29	209	3,097 00	12,008 00	106 79	57 45	15,105 00	24,798 09	250	1,904 24
9	9	675 00	360 00	75 00	40 00	1,035 00	1,456 83	30	239 50
40	200	4,200 00	10,971 03	105 00	54 85	15,171 03	31,860 52	63	942 86
20	60	1,500 00	3,175 00	75 00	52 91	4,675 00	6,226 73	32	462 75
80	480	8,340 00	27,136 57	104 25	56 53	35,476 57	66,479 78	36	27 50
130	800	18,575 00	55,231 79	142 88	69 04	73,806 79	116,672 03	148	4,305 36
9	9	540 00	288 00	60 00	32 00	828 00	1,094 50	3	14 99
9	27	765 00	1,178 00	85 00	43 63	1,943 00	3,799 10	8	77 00
15	51	1,375 00	2,395 00	91 66	46 96	3,770 00	4,997 64	39	288 00
....	50	....	2,348 00	....	46 96	2,348 00	3,424 65	10	187 50
18	54	1,626 45	2,671 50	90 35	49 47	4,297 95	10,875 35	60	1,062 86
67	460	7,947 50	27,772 75	118 61	60 37	35,720 25	922,382 60	32	735 00
10	19	592 50	670 00	59 25	35 26	1,262 50	1,570 93	14	86 00
....	36	....	2,025 00	....	56 25	2,025 00	3,366 84	14	50 00
10	47	800 00	2,303 75	80 00	49 01	3,103 75	4,103 53	26	418 20
....	18	....	898 76	....	49 92	898 76	1,684 84	......	....
20	120	1,900 00	6,000 00	95 00	50 00	7,900 00	10,675 30	59	1,047 50
8	9	495 00	405 00	61 85	45 00	900 00	1,104 57	1	....
14	10	872 50	397 75	62 32	39 75	1,270 25	2,592 25	3	35 00
9	26	775 00	1,300 17	86 11	50 00	2,075 17	11,761 37	......	....
9	36	585 00	1,620 00	65 00	45 00	2,205 00	5,755 56	1	....
10	40	900 00	1,795 00	90 00	44 87	2,695 00	3,818 34	39	....
29	66	2,482 50	3,315 50	85 60	50 23	5,798 00	7,552 74	77	1,449 05
70	140	5,300 00	7,200 00	75 71	51 43	12,500 00	25,314 65	......	....
8	32	720 00	1,560 00	90 00	48 75	2,280 00	3,057 45	7	56 25
9	29	850 00	1,401 50	94 44	48 33	2,251 50	3,097 40	11	151 70
9	27	745 00	1,260 00	82 78	46 67	2,005 00	2,452 50	23	386 55
170	1,260	18,347 42	77,576 28	107 92	61 57	95,923 70	199,985 08	164	3,385 14
230	1,850	24,738 00	114,176 30	107 55	61 71	138,914 30	202,091 35	150	564 75
9	9	648 00	405 00	72 00	45 00	1,053 00	4,870 38	......	....
9	38	900 00	1,960 00	100 00	51 58	2,860 00	4,055 70	35	565 17
18	36	1,170 00	1,569 50	65 00	43 59	2,739 50	5,046 27	20	287 00
20	230	2,125 00	12,070 60	106 00	52 48	14,195 60	26,025 54	45	953 40
18	81	1,599 97	3,657 50	88 88	45 15	5,257 47	7,549 36	26	461 27
10	40	900 00	1,950 00	90 00	48 75	2,850 00	3,648 84	31	248 75
10	70	1,950 00	3,850 00	195 00	55 00	5,800 00	7,498 19	28	371 24
45	423	6,178 60	24,463 98	137 30	57 83	30,642 58	57,709 96	112	2,923 76
9	54	900 00	2,385 00	100 00	44 16	3,285 00	5,679 30	11	36 55
9	9	495 00	360 00	55 00	40 00	855 00	1,142 07	......	....
9	27	875 00	1,350 00	97 22	50 00	2,225 00	3,277 36	52	798 22
....	18	....	801 00	....	44 50	801 00	958 96	......	....
9	63	1,100 00	2,625 00	122 22	41 66	3,725 00	6,832 25	25	258 00
20	400	2,800 50	28,082 35	140 02	70 20	30,882 85	50,446 33	4	....
50	250	4,280 00	14,253 79	85 60	57 01	18,533 79	25,633 87	47	493 00

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Birmingham	Oakland	525	464	196	83	$40,000	$26,500 00	3	16
Blanchard	Isabella	134	126	180	88	7,500	4,080 00	1	3
Blissfield Tp. 1 fr.	Lenawee	150	116	200	75	10,000	890 35	......	3
Blissfield Tp. 2 fr.	Lenawee	272	238	200	96	35,000	12,317 65	1	8
Bloomingdale	Van Buren	166	122	180	88	6,500	625 00	1	5
Boardman	Kalkaska	165	145	180	86	5,000	....	1	3
Boyne City	Charlevoix	1,600	1,439	190	94	80,000	35,500 00	3	36
Boyne Falls	Charlevoix	152	132	180	90	5,500	964 03	1	2
Breckenridge	Gratiot	150	148	200	93	5,000	....	2	4
Breedsville	Van Buren	111	101	180	66	9,000	2,000 00	1	2
Bridgehampton Tp. 1	Sanilac	69	47	180	53	700	....	1	......
Bridgehampton Tp. 2	Sanilac	75	63	200	75	1,500	....	1	......
Bridgehampton Tp. 5 fr.	Sanilac	66	44	180	55	800	....	1	......
Bridgeman	Berrien	178	112	160	63	1,500	....	1	1
Bridgeport	Saginaw	89	66	200	85	4,000	....	1	1
Brighton	Livingston	182	165	190	92	9,000	1,470 00	1	6
Britton	Lenawee	99	92	180	96	7,000	....	1	3
Bronson	Branch	271	190	190	96	22,000	1,200 00	1	8
Brooklyn	Jackson	146	136	190	92	....	....	1	5
Brown City	Sanilac	230	191	200	79	20,000	1,300 00	1	7
Buchanan	Berrien	422	365	190	86	50,000	3,020 25	2	11
Buckley	Wexford	209	176	180	75	5,600	1,072 47	1	4
Burden	Sanilac	102	85	200	57	2,700	525 00	1	1
Burlington	Calhoun	76	55	178	95	3,500	8 51	2	1
Burnip's Corners	Allegan	96	74	180	93	3,000	324 00	1	2
Burr Oak	St. Joseph	165	41	190	94	12,000	485 37	2	6
Burt Tp	Alger	264	253	200	98	15,000	2,505 00	1	7
Byron	Shiawassee	115	86	200	96	7,000	300 00	1	3
Cadillac	Wexford	2,523	2,239	190	95	250,000	53,500 00	7	56
Cady	Macomb	151	72	180	68	....	....	1	1
Caledonia	Kent	139	110	200	96	6,000	....	2	3
Caledonia Tp. 3	Kent	62	50	180	63	2,000	....	1	......
Calumet	Houghton	7,663	5,950	200	90	125,000	....	20	198
Calumet Tp. 2	Houghton	2,082	1,517	200	85	55,000	....	1	47
Camden	Hillsdale	109	95	180	90	9,500	800 00	1	5
CannonTp. 2 fr.	Kent	101	89	180	67	2,000	....	1	1
Capac	St. Clair	222	172	200	98	10,000	335 26	1	4
Carleton	Monroe	156	135	200	92	10,000	4,010 00	1	3
Caro	Tuscola	694	573	195	93	25,000	2,000 00	3	17
Carrollton Tp. 1	Saginaw	412	250	200	74	10,000	....	1	5
Carrollton Tp. 2	Saginaw	338	179	200	85	2,150	....	1	4
Carson City	Montcalm	239	162	190	90	18,000	3,000 00	2	6
Carsonville	Sanilac	184	138	200	76	4,000	....	1	3
Caseville	Huron	180	135	200	87	5,000	474 66	2	2
Casnovia	Muskegon	116	119	180	91	5,000	700 00	1	4
Cass City	Tuscola	397	371	200	93	20,000	....	2	10
Cassopolis	Cass	285	237	190	91	18,000	1,500 00	1	10
Cedar Springs	Kent	261	251	183	94	22,500	2,500 00	1	9
Central Lake	Antrim	253	223	190	96	1,800	....	1	8
Centerville	St. Joseph	161	146	190	96	22,000	499 00	2	6
Ceresco	Calhoun	69	55	180	65	2,000	....	......	2
Champion Tp	Marquette	421	320	200	88	15,000	....	2	10
Chandler Tp. 5 fr.	Huron	154	61	180	65	1,600	....	1	1
Charlevoix	Charlevoix	697	512	180	97	45,000	23,500 00	3	18
Charlotte	Eaton	870	938	195	94	52,000	....	3	28
Charlton Tp	Otsego	139	110	180	91	6,500	....	1	4
Chase	Lake	102	78	180	77	1,500	....	1	1
Chassell Tp	Houghton	596	436	200	84	11,000	2,000 00	2	12
Cheboygan	Cheboygan	2,300	1,514	200	91	125,000	90,000 00	5	33
Chelsea	Washtenaw	524	359	200	96	50,000	32,319 01	1	14

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
26	120	$1,110 00	$7,876 75	$42 69	$65 64	$8,986 75	$22,447 57	60	$1,801 99
9	24	630 00	1,080 00	70 00	45 00	1,710 00	5,643 75	12	....
....	30	....	1,600 00	....	53 33	1,600 00	2,597 56	1	6 00
10	80	1,200 00	4,500 00	120 00	56 25	5,700 00	9,131 60	80	1,832 50
9	45	675 00	2,160 00	75 00	48 00	2,835 00	3,871 81	33	345 88
9	27	750 00	1,260 00	83 33	46 66	2,010 00	2,419 95	5	24 00
29	335	3,600 00	18,656 62	124 14	55 69	22,256 62	32,866 74	32	565 41
9	18	624 75	990 00	69 42	55 00	1,614 75	2,562 18	3	7 50
20	40	1,250 00	1,850 00	62 50	46 25	3,100 00	4,575 38	44	726 50
9	18	675 00	765 00	75 00	42 50	1,440 00	1,957 92	6	24 75
9	....	585 00	....	65 00	....	585 00	673 92	....	....
10	....	750 00	....	75 00	....	750 00	1,005 36	2	....
9	....	472 50	....	52 50	....	472 50	555 85	4	....
8	8	600 00	440 00	75 00	55 00	1,040 00	1,516 24	....	....
10	10	600 00	450 00	60 00	45 00	1,050 00	1,922 14	1	6 50
10	60	950 00	2,633 25	95 00	43 88	3,583 25	6,194 95	40	586 80
9	27	720 00	1,215 00	80 00	45 00	1,935 00	2,972 43	17	162 54
10	76	1,000 00	3,990 00	100 00	52 50	4,990 00	6,648 93	52	928 90
10	47	950 00	2,205 00	95 00	46 91	3,155 00	4,026 17	41	678 21
10	70	1,000 00	3,425 00	100 00	48 93	4,425 00	6,105 51	42	638 00
19	105	2,155 00	4,935 00	113 42	46 99	7,090 00	10,800 43	48	730 52
9	36	675 00	1,732 50	75 00	48 12	2,407 50	2,842 54	10	22 75
10	10	750 00	450 00	75 00	45 00	1,200 00	1,557 09	2	....
18	9	860 00	360 00	47 77	40 00	1,220 00	1,923 99	6	....
9	18	675 00	747 00	75 00	41 50	1,422 00	1,605 44	14	88 00
20	54	1,665 00	2,651 25	83 25	49 09	4,316 25	5,791 56	40	726 88
10	68	1,050 00	3,810 00	150 00	56 03	4,860 00	10,865 78	....	....
10	30	800 00	1,300 00	80 00	43 33	2,100 00	2,902 39	31	278 00
67	532	7,650 03	30,868 09	114 18	58 02	38,518 12	75,843 56	38	629 30
9	9	472 50	405 00	52 50	45 00	877 50	1,199 43	3	....
20	30	1,500 00	1,450 00	75 00	48 33	2,950 00	4,159 79	25	450 10
9	....	585 00	....	65 00	....	585 00	745 71	....	....
174	1,896	23,407 25	124,577 77	134 52	65 70	147,985 02	210,385 44	153	8,562 00
10	440	650 00	26,488 76	65 00	60 19	27,138 76	52,668 71	....	....
9	45	900 00	2,019 00	100 00	44 87	2,919 00	4,017 55	32	511 73
9	9	540 00	315 00	60 00	35 00	855 00	1,018 90	3	31 05
10	40	1,000 00	1,977 70	100 00	49 44	2,977 70	3,970 86	46	460 50
10	30	800 00	1,300 00	80 00	43 33	2,100 00	3,164 30	27	384 08
30	169	2,582 50	8,467 50	86 08	50 10	11,050 00	17,285 63	84	1,220 00
10	50	1,000 00	2,896 25	100 00	57 92	3,896 25	5,666 15	1	6 75
10	39	850 00	1,611 00	85 00	41 30	2,461 00	3,853 35	....	....
19	57	1,520 00	2,785 00	80 00	48 86	4,305 00	9,509 64	48	551 24
10	30	800 00	1,550 00	80 00	51 66	2,350 00	2,865 79	7	140 00
20	20	1,200 00	820 00	60 00	41 00	2,020 00	4,887 36	12	....
9	36	800 00	1,755 00	88 89	48 75	2,556 00	3,480 95	18	229 00
20	100	1,875 00	4,900 00	93 75	49 00	6,755 00	9,142 27	77	1,205 60
10	76	1,200 00	4,052 50	120 00	53 32	5,252 50	7,069 10	48	492 55
10	76	1,100 00	3,997 50	110 00	52 59	5,097 50	6,674 53	54	816 00
10	76	1,150 00	3,823 55	115 00	50 31	4,973 55	6,186 32	24	364 75
17	47	1,505 00	2,572 50	88 53	54 73	4,077 50	5,127 30	30	294 00
....	18	....	810 00	....	45 00	810 00	1,185 96	....	....
20	90	2,300 00	5,125 00	115 00	56 94	7,425 00	10,285 35	....	....
8	9	640 00	405 00	80 00	45 00	1,045 00	1,362 14	....	....
27	162	3,000 06	9,980 10	111 11	61 60	12,980 16	22,819 53	30	496 00
30	280	3,700 00	15,550 90	123 33	55 54	19,250 90	24,749 67	89	1,943 95
9	33	405 00	1,560 00	45 00	47 27	1,965 00	3,027 10	....	....
9	9	511 75	360 00	56 86	40 00	871 75	1,126 29	1	3 00
20	120	1,750 00	5,693 25	87 50	47 44	7,443 25	12,364 34	....	....
50	330	4,850 00	16,950 00	97 00	51 36	21,800 00	54,902 47	36	751 00
10	140	1,400 00	6,751 25	140 00	48 22	8,151 25	14,416 81	66	1,152 68

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men	Women.
Chesaning	Saginaw	386	287	200	97	$17,000	......	2	8
Chief	Manistee	89	66	160	64	1,700	$400 00	......	2
Chikaming Tp. 3	Berrien	99	73	180	82	1,600	......	......	2
Clare	Clare	450	421	200	92	30,000	......	3	11
Clarkston	Oakland	124	121	200	94	1,400	10,662 03	1	4
Clarksville	Ionia	105	89	180	95	2,000	......	1	3
Clayton	Lenawee	88	80	180	91	14,000	6,000 00	1	3
Climax	Kalamazoo	128	128	180	83	6,500	......	1	4
Clinton	Lenawee	190	161	190	97	20,000	8,975 00	1	8
Clio	Genesee	242	221	200	87	10,000	1,100 00	1	6
Coldwater	Branch	1,317	1,084	180	93	100,000	......	5	35
Coleman	Midland	408	365	200	62	1,800	1,600 00	1	8
Coloma	Berrien	192	200	180	93	10,000	......	1	6
Colon	St. Joseph	250	206	180	87	30,000	7,750 00	2	6
Columbiaville	Lapeer	77	105	200	81	16,000	600 00	1	3
Comstock	Kalamazoo	364	292	180	82	10,000	1,232 86	1	9
Concord	Jackson	128	107	190	96	9,000	500 00	1	6
Conklin	Ottawa	121	89	180	99	2,700	1,200 00	......	3
Constantine	St. Joseph	260	221	190	89	25,000	2,105 44	1	8
Coopersville	Ottawa	257	244	190	94	19,500	14,300 00	2	7
Copemish	Manistee	135	113	180	76	10,000	4,000 00	1	2
Coral	Montcalm	100	94	180	75	8,000	......	1	2
Corunna	Shiawassee	399	371	200	94	40,000	16,000 00	1	13
Covert	Van Buren	146	96	160	83	3,500	500 00	1	4
Croswell	Sanilac	448	401	182	87	45,000	33,500 00	2	8
Crystal	Montcalm	98	83	180	95	6,000	1,900 00	1	2
Crystal Falls	Iron	1,770	1,336	195	95	150,000	56,913 39	7	38
Cumming Tp. 3	Ogemaw	114	78	180	74	1,600	......	1	1
Custer	Mason	111	91	180	80	2,000	150 00	1	2
Dansville	Ingham	84	73	200	84	3,000	600 00	2	2
Davison	Genesee	203	154	200	92	10,000	1,400 00	1	6
Dearborn	Wayne	383	276	200	84	30,000	700 00	1	8
Decatur	Van Buren	408	344	188	89	23,000	12,428 40	1	12
Deckerville	Sanilac	239	210	200	71	15,000	14,000 00	1	4
Deerfield	Lenawee	189	186	180	76	6,000	......	1	4
Detour	Chippewa	304	217	200	90	5,000	......	1	5
Detroit	Wayne	118,622	77,745	200	94	7,631,242	875,000 00	223	1,564
De Witt	Clinton	112	82	180	90	6,000	650 00	1	3
Dexter	Washtenaw	204	216	190	95	20,000	350 00	1	8
Dimondale	Eaton	101	91	190	82	1,000	650 00	1	5
Dorr	Allegan	106	72	180	94	6,500	4,138 33	1	2
Douglass	Allegan	140	117	178	83	7,000	328 50	1	4
Dowagiac	Cass	1,231	1,097	185	93	145,000	16,700 00	5	31
Dryden	Lapeer	141	115	195	77	10,000	3,000 00	1	3
Dundee	Monroe	207	230	179	88	20,000	......	1	7
Durand	Shiawassee	613	595	200	92	45,000	17,000 00	2	15
East Grand Rapids	Kent	215	161	200	68	6,000	......	......	8
East Jordan	Charlevoix	971	703	190	92	40,803	20,002 54	2	19
East Lansing	Ingham	168	131	177	93	1,500	10,100 00	1	5
East Tawas	Iosco	460	370	200	90	30,000	17,108 74	1	10
Eaton Rapids	Eaton	430	394	197	93	40,000	181 66	2	14
Eau Claire	Berrien	113	97	180	92	6,000	......	2	3
Ecorse Tp. 1	Wayne	589	324	200	70	21,000	34,000 00	1	10
Ecorse Tp. 3	Wayne	315	302	200	79	27,900	26,800 00	1	8
Ecorse Tp. 12	Wayne	248	200	200	70	12,000	10,000 00	1	4
Edenville	Midland	89	54	180	61	2,000	......	1	1
Edmore	Montcalm	302	265	190	78	9,000	200 00	1	6
Edwardsburg	Cass	107	77	180	94	3,000	......	1	3
Elk Rapids	Antrim	431	396	187	91	30,000	......	2	14
Elkton	Huron	260	219	200	88	15,000	2,750 00	2	6

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
20	80	$1,880 00	$4,015 00	$94 00	$50 19	$5,895 00	$7,928 33	38	$632 50
....	16	....	758 00	....	47 37	758 00	1,004 51	1	11 25
....	17	....	805 00	....	47 35	805 00	1,460 87	......	....
30	110	1,000 00	5,870 00	33 33	53 36	6,870 00	8,912 80	53	1,054 39
10	36	900 00	1,590 00	90 00	44 16	2,490 00	13,814 29	16	287 06
9	27	630 00	1,254 00	70 00	46 44	1,884 00	2,616 20	17	153 00
9	26	720 00	1,181 25	80 00	45 43	1,901 25	3,103 38	24	291 00
9	36	765 00	1,800 00	85 00	50 00	2,565 00	3,387 27	22	323 88
10	76	1,100 00	3,020 50	110 00	39 74	4,120 50	6,576 10	54	925 50
10	60	900 00	3,035 00	90 00	50 58	3,935 00	5,426 05	33	684 60
38	333	5,425 00	19,570 00	142 76	58 76	24,995 00	35,580 18	90	1,899 20
10	80	1,000 00	3,875 00	100 00	48 44	4,875 00	6,560 85	19	279 47
9	54	900 00	2,565 00	100 00	47 50	3,465 00	4,240 40	38	906 76
18	54	1,495 00	2,745 00	83 05	50 83	4,240 00	6,429 37	40	720 50
10	30	850 00	1,425 00	85 00	47 50	2,275 00	3,411 55	25	200 75
9	90	1,000 00	3,519 23	111 11	39 10	4,519 23	8,060 16	2	50 50
10	48	750 00	1,995 00	75 00	41 56	2,745 00	3,810 19	23	266 07
....	27	....	1,485 00	....	55 00	1,485 00	3,141 48	15	253 00
10	76	1,100 00	4,300 00	110 00	56 58	5,400 00	7,191 42	45	577 05
19	65	1,425 00	2,969 25	75 00	45 68	4,394 25	6,680 44	57	1,036 31
9	18	585 00	855 00	65 00	47 50	1,440 00	2,483 44	4	32 40
9	18	630 00	720 00	70 00	40 00	1,350 00	2,182 78	5	100 00
10	130	1,300 00	5,855 00	130 00	45 04	7,155 00	11,101 15	26	472 00
9	36	720 00	1,530 00	80 00	42 50	2,250 00	3,109 25	12	150 00
20	80	2,000 00	4,008 74	100 00	50 10	6,008 74	17,150 84	52	868 50
9	18	572 00	823 00	63 55	45 72	1,395 00	2,014 70	19	117 25
70	380	7,641 25	20,325 00	109 15	53 48	27,966 25	64,512 20	8	90 00
9	9	441 00	405 00	49 00	45 00	846 00	1,016 03	......	....
9	18	525 00	765 00	58 33	42 50	1,290 00	1,756 11	1	....
20	20	1,200 00	900 00	60 00	45 00	2,100 00	2,643 44	6	32 00
10	60	900 00	2,571 00	90 00	42 85	3,471 00	4,331 33	22	420 45
10	80	950 00	3,477 25	95 00	43 46	4,427 25	5,852 92	27	464 08
10	114	1,100 00	5,017 89	110 00	44 01	6,117 89	18,625 60	53	800 72
10	40	1,000 00	2,100 00	100 00	52 50	3,100 00	4,881 84	57	698 13
9	36	810 00	1,665 00	90 00	46 25	2,475 00	3,217 52	17	234 75
10	50	850 00	2,075 00	85 00	41 50	2,925 00	5,604 97	......	....
2,200	15,600	235,953 70	1,402,499 10	107 25	89 93	1,638,452 80	2,820,323 57	540	....
9	27	648 20	990 00	72 02	36 66	1,638 20	2,277 53	11	118 60
9	76	1,000 00	3,925 00	111 11	51 64	4,925 00	6,432 58	32	693 15
10	28	760 00	1,550 00	76 00	55 35	2,310 00	3,068 21	20	352 80
9	18	585 00	675 00	65 00	37 50	1,260 00	1,998 34	12	36 10
9	36	720 00	1,710 00	80 00	47 50	2,430 00	3,106 62	8	39 00
48	295	5,300 00	15,341 25	110 41	52 00	20,641 25	31,820 66	77	1,021 71
10	30	750 00	1,400 00	75 00	46 66	2,150 00	2,858 08	14	182 36
9	63	900 00	3,120 50	100 00	49 53	4,020 50	5,439 59	25	456 67
20	127	2,000 00	6,685 00	100 00	52 64	8,685 00	16,581 85	23	365 00
....	51	....	2,372 50	....	46 52	2,372 50	3,908 13	5	16 50
19	181	2,202 50	9,998 75	115 92	55 24	12,201 25	19,920 67	32	112 48
9	45	900 00	1,853 75	100 00	41 19	2,753 75	4,628 37	20	109 60
10	100	950 00	4,747 75	95 00	44 47	5,697 75	8,302 85	8	85 00
20	140	2,000 00	7,142 25	100 00	51 01	9,142 25	11,758 04	62	1,023 05
18	18	1,305 00	759 25	72 50	42 18	2,064 25	2,707 79	34	249 50
10	90	1,000 00	5,151 25	100 00	57 24	6,151 25	36,956 74	1	....
10	68	900 00	3,287 50	90 00	48 34	4,187 50	9,399 50	......	....
10	40	650 00	1,490 00	65 00	37 25	2,140 00	4,041 54	......	....
9	9	540 00	423 00	60 00	47 00	963 00	1,102 10	......	....
10	47	1,100 00	2,250 75	110 00	47 88	3,350 75	4,093 00	35	400 80
9	27	765 00	1,260 00	85 00	46 66	2,025 00	2,848 86	23	160 74
19	133	2,065 00	6,788 33	108 68	51 04	8,853 33	12,091 51	25	244 70
20	50	1,750 00	2,380 00	87 50	47 60	4,130 00	6,120 24	26	408 00

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Elk Tp. 4 fr.	Sanilac	83	60	200	39	$1,200		1	1
Elm Hall	Gratiot	87	64	180	75	3,000		1	1
Elmira	Otsego	150	124	180	81	10,000	$2,000 00	3	2
Elm River Tp	Houghton	252	203	200	95	16,000	6,000 00	1	9
Elsie	Clinton	216	173	190	98	20,000	5,725 00	2	6
Empire	Leelanau	193	185	180	91	6,500	1,018 58	1	5
Escanaba	Delta	4,159	2,507	200	95	293,000	108,100 00	7	67
Essexville	Bay	401	160	200	70	10,000		1	4
Estey	Gladwin	93	83	182	58	1,400		1	3
Evart	Osceola	451	361	190	90	15,000	500 00	1	10
Fairgrove	Tuscola	134	135	180	77	4,900	1,600 00	1	4
Fair Haven	St. Clair	135	60	200	55	2,000		1	1
Falmouth	Missaukee	165	139	180	78	3,000	650 00	1	3
Farmington	Oakland	169	145	200	75	5,500	29 21	1	4
Farwell	Clare	221	200	180	70	10,000	7,200 00	2	4
Felch Tp	Dickinson	277	205	163	96	20,000	6,872 02	4	3
Fennville	Allegan	220	169	180	87	8,000		1	5
Fenton	Genesee	519	481	180	95	65,000	2,000 00	2	15
Fife Lake	Grand Traverse	129	119	180	80	5,000		2	1
Filion	Huron	82	41	200	63	1,200			1
Fillmore Tp. 1	Allegan	128	90	180	79	2,000		1	1
Fillmore Tp. 2	Allegan	202	113	180	79	2,600			2
Flat Rock	Wayne	109	93	200	62	16,000	9,000 00	2	3
Flint	Genesee	7,848	5,899	200	93	400,000	259,000 00	9	145
Flushing	Genesee	294	264	200	93	25,000	6,639 75	2	6
Forester Tp. 4 fr.	Sanilac	80	65	200	64	1,500	263 50		1
Forest Grove	Ottawa	90	69	180	88	2,000	199 00	1	1
Forestville	Sanilac	104	88	180	67	1,200	242 28	1	1
Forsyth Tp	Marquette	614	585	200	83	60,600	25,000 00	2	19
Fostoria	Tuscola	89	77	183	91	4,000		1	3
Fowler	Clinton	136	55	200	95	1,000		1	3
Fowlerville	Livingston	199	174	200	95	15,000	1,000 00	2	7
Frankfort	Benzie	601	532	195	78	33,000	3,678 18	3	12
Freeport	Barry	142	127	180	93	7,000	100 00	2	3
Freeland	Saginaw	152	125	200	80	3,000		1	2
Freesoil	Mason	165	121	180	86	1,500		1	2
Freemont	Newaygo	567	550	200	84	40,000	17,000 00	3	16
Frontier	Hillsdale	85	85	180	92	3,000		3	2
Fruitport	Muskegon	100	97	200	95	2,400	900 00	1	2
Gagetown	Tuscola	203	103	200	76	6,000	181 45	1	3
Gaines	Genesee	101	88	200	88		1,084 00	1	3
Galesburg	Kalamazoo	188	161	180	95	15,000	300 00	3	7
Galien	Berrien	140	113	180	83	5,000	6 83	1	3
Garfield Tp. 1	Clare	102	80	180	81	1,500		1	1
Gaylord	Otsego	482	382	183	73	20,000	4,500 00	2	12
Germfask	Schoolcraft	134	113	200	85	7,000	3,300 00	2	6
Gladstone	Delta	1,418	1,167	196	95	56,000	22,500 00	3	26
Gladwin	Gladwin	317	314	200	92	21,000	15,000 00	1	7
Gobleville	Van Buren	148	163	180	81	15,000	5,600 00	1	6
Graafschap	Allegan	119	70	180	84	2,000	210 00		2
Grand Blanc	Genesee	158	137	200	83	7,000	800 00	1	5
Grand Haven	Ottawa	1,661	1,224	200	98	90,000	27,000 00	3	31
Grand Junction	Van Buren	90	63	176	79	2,500		1	1
Grand Ledge	Eaton	667	638	190	94	25,000		3	16
Grand Rapids	Kent	29,628	16,307	200	82	1,922,900	806,000 00	36	505
Grandville	Kent	317	245	200	98	20,000	16,400 00	1	9
Grant	Newaygo	179	148	190	90	5,000		1	4
Grass Lake	Jackson	190	199	200	91	15,000		1	7
Grattan	Kent	89	66	180	81	1,000	190 31	1	1
Grayling	Crawford	622	525	190	95	20,000		1	14

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
10	10	$630 00	$300 00	$63 00	$30 00	$930 00	$1,029 10	......	....
9	9	537 00	309 75	59 66	34 42	846 75	1,138 47	1	....
24	18	1,485 01	945 00	61 87	52 50	2,430 01	3,217 20	3	$39 75
10	70	1,050 00	3,773 75	105 00	53 91	4,823 75	9,094 50	......	....
19	48	1,750 00	2,347 50	92 10	48 90	4,097 50	5,400 79	48	749 53
9	45	900 00	2,070 00	100 00	46 00	2,970 00	4,587 60	20	301 82
70	670	8,939 96	37,893 21	113 43	56 56	46,833 17	91,197 02	36	1,110 00
10	40	900 00	2,350 00	90 00	58 75	3,250 00	5,713 72	5	....
7	9	367 50	451 50	52 50	50 16	819 00	1,361 73	......	....
10	95	1,300 00	5,462 88	130 00	57 50	6,762 88	10,110 18	62	825 00
9	36	750 00	1,600 00	83 33	44 45	2,350 00	2,967 59	18	78 00
10	10	750 00	400 00	75 00	40 00	1,150 00	1,705 47	......	....
9	25	675 00	1,057 50	75 00	42 30	1,732 50	2,415 60	4	45 00
10	40	775 00	1,800 00	77 50	45 00	2,575 00	3,542 75	35	472 84
18	36	1,305 00	1,530 00	52 00	40 00	2,835 00	3,844 50	10	95 30
32	26	2,241 00	1,370 00	70 00	52 69	3,611 00	18,566 37	2	18 00
9	45	900 00	2,160 00	100 00	48 00	3,060 00	4,436 66	35	526 50
18	135	2,250 00	8,150 00	125 00	60 37	10,400 00	14,164 72	102	1,563 30
18	9	1,179 00	477 00	65 50	53 00	1,656 00	2,202 23	10	78 00
....	10	....	610 00	....	61 00	610 00	957 14	......	....
9	9	675 00	360 00	75 00	40 00	1,035 00	1,518 03	3	....
....	18	....	990 00	....	55 00	990 00	1,396 73	7	....
20	30	1,250 00	1,400 00	62 50	46 66	2,650 00	10,672 74	13	67 00
90	1,450	11,300 00	84,365 32	125 55	58 18	95,665 32	183,921 85	79	1,983 80
20	59	1,900 00	2,475 00	95 00	41 95	4,375 00	6,530 01	64	932 30
....	10	....	550 00	....	55 00	550 00	939 25	3	....
9	9	540 00	360 00	60 00	40 00	900 00	1,164 62	......	....
9	6	742 50	180 00	82 50	30 00	922 50	1,340 51	1	....
20	190	2,460 00	11,800 00	123 00	62 10	14,260 00	24,802 92	4	....
10	30	600 00	1,100 00	60 00	36 66	1,700 00	2,275 15	22	218 79
10	20	731 25	900 00	73 13	45 00	1,631 25	2,066 29	18	262 87
20	70	1,450 00	3,400 00	72 50	48 57	4,850 00	6,074 88	56	997 00
26	124	2,336 25	6,402 50	89 85	51 63	8,738 75	13,953 37	19	....
18	27	1,240 00	1,260 00	68 88	46 66	2,500 00	2,883 65	15	149 38
10	20	750 00	1,100 00	75 00	55 00	1,850 00	2,496 49	18	241 40
30	129	2,734 75	6,585 81	91 15	51 05	9,320 56	15,188 32	65	1,226 36
9	18	607 50	832 50	67 50	46 25	1,440 00	1,942 96	......	....
24	12	1,140 00	480 00	47 50	40 00	1,620 00	2,080 89	33	435 52
10	20	750 00	1,000 00	75 00	50 00	1,750 00	3,269 62	......	....
10	30	750 00	1,200 00	75 00	40 00	1,950 00	2,865 49	10	279 50
10	30	800 00	1,192 75	80 00	39 75	1,992 75	2,621 53	18	501 80
17	63	1,059 50	3,150 00	62 32	50 00	4,200 50	5,282 60	44	401 79
9	27	800 00	1,395 00	88 88	51 66	2,195 00	2,893 03	15	237 25
9	9	468 00	360 00	52 00	40 00	828 00	1,270 71	......	....
13	111	1,582 00	6,150 00	121 69	55 40	7,732 00	10,435 90	19	113 00
4	45	311 25	2,438 12	77 81	54 18	2,749 37	3,906 36	1	....
25	256	2,825 00	13,193 25	113 00	51 53	16,018 25	23,372 01	10	....
10	70	800 00	3,075 00	80 00	43 93	3,875 00	4,994 90	45	567 82
9	46	900 00	2,094 90	100 00	45 54	2,094 90	4,560 19	47	982 68
....	18	....	990 00	....	55 00	990 00	1,860 82	8	....
10	30	650 00	1,238 50	65 00	41 26	1,888 50	3,163 99	17	154 50
30	310	3,400 00	15,883 30	113 33	51 23	19,283 30	29,843 02	39	867 39
9	9	540 00	450 00	60 00	50 00	990 00	1,640 75	3	21 25
28	143	2,050 00	8,572 00	73 21	59 94	10,622 00	16,877 26	69	1,267 50
360	5,045	62,156 45	388,388 19	172 65	76 98	450,544 64	766,277 00	99	3,670 48
10	90	1,000 00	4,075 00	100 00	45 28	5,075 00	8,193 03	25	626 25
9	38	712 50	1,900 00	79 17	50 00	2,612 50	3,338 45	17	181 50
10	70	1,000 00	2,900 00	100 00	41 43	3,900 00	4,906 50	42	646 23
9	9	600 00	375 00	66 67	41 67	975 00	1,232 00	6	14 00
10	116	1,175 00	5,698 50	117 50	49 12	6,873 50	10,228 16	......	....

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Greenland Tp.	Ontonagon	853	748	197	91	$24,335	$6,339 88	2	21
Greenville	Montcalm	931	866	200	93	75,000	55,500 00	1	25
Grindstone City	Huron	157	129	200	71	8,000	3,791 22	1	2
Grosse Isle	Wayne	204	161	200	57	32,000	18,000 00	2	4
Grosse Pointe Tp. 1	Wayne	386	251	200	63	34,975	23,000 00	2	7
Hadley	Lapeer	92	70	183	83	5,000	1,000 00	2	3
Hale	Iosco	143	105	180	80	2,400	714 30	1	2
Halfway	Macomb	166	72	200	75	4,000	....	......	2
Hamilton	Allegan	151	114	180	82	7,000	2,000 00	1	2
Hamtramck	Wayne	2,073	879	200	62	99,000	67,000 00	1	17
Hamtramck Tp. 3	Wayne	196	110	200	60	3,500	500 00	......	2
Hamtramck Tp. 5	Wayne	406	177	200	80	15,300	14,800 00	2	4
Hancock	Houghton	2,606	1,587	200	97	166,995	7,000 00	8	37
Hanover	Jackson	88	80	195	86	15,000	7,211 50	1	4
Harbor Beach	Huron	505	419	200	72	40,000	12,800 00	3	9
Harbor Springs	Emmet	1,030	518	190	94	20,000	2,000 00	2	14
Harrietta	Wexford	133	135	180	74	4,200	1,150 00	1	3
Harrison	Clare	199	136	180	82	5,000	20 34	2	4
Harrisville	Alcona	196	170	180	84	14,000	12,850 43	1	3
Hart	Oceana	486	484	192	87	50,000	15,200 00	2	15
Hartford	Van Buren	336	287	180	86	12,000	3,500 00	2	8
Haslett	Ingham	94	70	180	91	9,000	....	1	2
Hastings	Barry	1,049	983	200	95	65,000	5,000 00	6	29
Hematite Tp	Iron	351	321	200	90	30,800	3,300 56	1	10
Hemlock	Saginaw	149	98	200	88	5,000	513 53	......	3
Hersey	Osceola	136	105	185	93	5,000	431 54	1	4
Hesperia	Newaygo	165	163	180	80	6,000	400 00	1	4
Highland Park	Wayne	1,911	1,253	189	79	187,000	181,000 00	4	44
Hillman	Montmorency	330	273	200	72	20,000	13,500 00	2	5
Hillsdale	Hillsdale	1,438	1,094	190	96	120,000	54,738 12	4	32
Holland	Ottawa	3,258	2,375	195	96	300,000	44,000 00	5	55
Holland Tp. 3	Ottawa	134	93	200	90	4,000	....	1	2
Holland Tp. 4	Ottawa	74	40	180	80	1,000	....	1	1
Holland Tp. 6	Ottawa	117	80	180	66	2,500	150 00	......	2
Holland Tp. 9	Ottawa	152	129	200	66	10,000	5,000 00	......	3
Holland Tp. 11 fr	Ottawa	84	61	180	50	2,000	825 00	1	1
Holly	Oakland	378	296	200	97	18,500	30,000 00	1	9
Holt	Ingham	91	59	180	73	3,000	400 00	1	2
Holton	Muskegon	106	91	180	85	2,000	....	......	2
Homer	Calhoun	228	218	200	98	20,000	3,600 00	1	9
Honor	Benzie	248	230	180	74	5,400	1,550 00	1	5
Hope Tp. 1	Midland	92	72	180	87	1,800	....	1	1
Hopkins	Allegan	137	114	160	84	12,000	9,000 00	1	4
Horton	Jackson	66	54	190	90	5,000	....	1	3
Houghton	Houghton	2,688	2,010	200	94	22,500	52,000 00	9	73
Howard City	Montcalm	304	272	190	80	5,000	1,033 80	2	7
Howell	Livingston	536	486	200	96	60,000	....	2	20
Hubbard Lake	Alpena	340	184	180	52	4,200	....	......	5
Hubbardston	Ionia	117	99	180	90	4,500	62 07	1	3
Hudson	Lenawee	600	490	190	97	27,000	3,667 03	4	15
Hudsonville	Ottawa	231	198	180	79	10,000	5,600 00	1	4
Hume Tp. 1	Huron	71	50	200	58	1,500	146 08	1	......
Ida	Monroe	147	99	180	86	15,000	5,983 80	1	4
Imlay City	Lapeer	208	269	200	95	2,000	2,893 20	1	8
Ionia	Ionia	1,222	875	200	93	100,000	20,000 00	4	31
Iron Mountain	Dickinson	3,267	2,669	200	96	475,000	161,000 00	7	67
Iron River	Iron	1,081	904	200	89	120,000	61,427 50	6	30
Ironwood	Gogebic	4,059	2,574	198	94	300,000	65,000 00	10	78
Ishpeming	Marquette	4,014	2,777	188	86	350,000	36,000 00	11	76
Ithaca	Gratiot	560	463	190	94	50,000	23,000 00	4	13

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
20	209	$2,150 00	$12,712 50	$107 50	$60 82	$14,862 50	$22,398 68	1	....
10	250	1,700 00	13,615 00	170 00	54 46	15,315 00	46,311 80	59	$1,004 60
10	20	750 00	888 75	75 00	44 43	1,638 75	2,312 84	8	7 00
14	33	1,140 00	1,775 00	81 43	53 78	2,915 00	22,966 00	......	....
10	50	1,000 00	2,780 00	100 00	55 60	3,780 00	8,476 73	15	42 09
19	29	1,225 00	1,140 00	64 47	39 31	2,365 00	4,357 57	40	478 90
9	18	810 00	725 00	90 00	40 28	1,535 00	2,037 09	11	155 50
....	20	....	1,200 00	....	60 00	1,200 00	1,961 37	5	38 50
9	17	675 00	685 00	75 00	40 29	1,360 00	1,534 66	7	93 00
10	153	1,400 00	9,140 00	140 00	59 73	10,540 00	36,627 26	11	29 80
....	20	....	1,125 00	....	56 25	1,125 00	1,743 20	7	16 00
10	36	848 00	1,920 00	84 80	53 33	2,768 00	4,707 25	1	1 00
80	344	8,929 50	20,742 00	111 62	60 29	29,671 50	44,487 88	29	1,221 50
10	40	800 00	1,800 00	80 00	45 00	2,600 00	3,922 37	28	378 50
30	90	2,530 00	4,725 00	84 33	52 50	7,255 00	10,803 29	13	174 00
19	133	2,500 00	8,012 70	131 58	60 24	10,512 70	10,562 64	12	66 50
9	27	675 00	1,350 00	75 00	50 00	2,025 00	2,999 73	7	28 00
18	35	1,368 00	1,644 75	76 00	46 99	3,012 75	4,503 58	16	215 83
9	27	810 00	1,350 00	90 00	50 00	2,160 00	2,680 14	11	45 00
19	132	1,960 04	7,215 08	103 16	54 66	9,175 12	30,839 12	82	2,078 32
18	72	1,800 00	3,690 00	100 00	51 25	5,490 00	7,905 29	72	1,243 58
9	18	567 00	765 00	64 11	42 50	1,332 00	1,756 66	9	95 64
60	268	6,300 00	15,914 50	105 00	59 38	22,214 50	30,869 41	141	2,624 35
10	100	1,300 00	5,969 12	130 00	59 69	7,269 12	17,658 09	1	....
....	29	....	1,613 00	....	55 62	1,613 00	2,320 43	4	20 00
9	38	800 00	1,733 75	88 89	45 62	2,533 75	3,433 03	17	209 30
9	36	810 00	1,620 00	90 00	45 00	2,430 00	5,119 68	15	219 73
40	354	5,152 50	22,684 00	128 81	64 08	27,836 50	115,925 56	16	232 08
10	50	1,000 00	1,950 00	100 00	39 00	2,950 00	11,703 16	3	....
30	304	4,600 00	16,505 16	153 33	54 29	21,105 16	30,769 99	90	1,499 50
40	545	4,891 99	30,289 32	122 29	55 57	35,181 31	54,679 48	76	398 70
10	20	700 00	778 75	70 00	38 93	1,478 75	1,808 80	......	....
9	9	450 00	306 00	50 00	34 00	756 00	1,068 83	......	....
....	18	....	892 00	....	49 55	892 00	1,217 32	......	....
....	30	....	1,430 00	....	47 66	1,430 00	2,481 04	1	7 80
9	9	558 00	272 30	62 00	30 25	830 30	1,260 08	5	47 05
10	90	1,050 00	4,450 00	105 00	49 44	5,500 00	7,294 95	47	732 03
9	18	570 00	652 50	63 33	35 14	1,222 50	1,593 75	7	103 00
....	9	....	1,035 00	....	115 00	1,035 00	1,513 06	......	31 50
10	90	1,000 00	4,475 00	100 00	49 72	5,475 00	7,377 75	41	617 00
9	45	1,000 00	2,002 50	111 11	44 50	3,002 50	4,825 17	14	80 25
9	9	585 00	360 00	65 00	40 00	945 00	1,503 77	4	38 00
8	32	810 00	1,755 00	101 25	54 84	2,565 00	14,709 47	32	518 13
9	29	800 00	1,306 25	88 88	45 04	2,106 25	2,663 67	31	312 23
90	598	10,350 00	34,461 58	115 00	57 63	44,811 58	91,725 41	12	506 13
14	64	1,100 00	3,474 50	78 57	54 28	4,574 50	6,070 26	30	371 00
20	170	2,100 00	8,113 50	105 00	47 72	10,213 50	14,216 19	100	1,920 00
....	45	....	2,100 00	....	46 66	2,100 00	2,763 59	2	....
9	27	630 00	1,305 00	70 00	48 33	1,935 00	2,525 94	15	176 00
38	143	2,700 00	8,202 50	71 05	57 36	10,902 50	14,223 64	88	1,471 23
9	27	720 00	955 00	80 00	35 37	1,675 00	2,794 17	9	14 69
10	....	700 00	....	70 00	....	700 00	789 60	......	....
9	36	750 00	1,734 75	83 33	48 18	2,484 75	3,415 65	15	252 42
10	80	1,200 00	4,250 00	120 00	53 12	5,450 00	7,741 46	44	839 50
40	310	4,450 00	19,106 08	111 25	61 63	23,556 08	36,956 91	125	1,975 27
70	670	9,100 00	45,026 54	130 00	67 20	54,126 54	240,525 79	40	477 16
37	209	3,971 00	12,046 65	107 32	57 64	16,017 65	31,335 25	1	....
100	780	11,400 00	45,845 65	114 00	58 77	57,245 65	95,868 55	18	592 50
105	722	12,900 00	48,110 45	122 85	66 63	61,010 45	90,755 81	......	....
38	124	3,350 00	6,550 00	88 15	52 82	9,900 00	24,767 21	104	1,689 50

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Jackson	Jackson	7,194	4,652	196	95	$474,050	$145,000 00	13	123
Jamestown	Ottawa	118	78	180	84	4,500	....	1	2
Jennings	Missaukee	359	325	190	92	11,000	....	1	8
Jerome	Hillsdale	101	69	180	70	7,000	4,354 70	1	2
Jonesville	Hillsdale	329	287	197	97	30,000	....	1	9
Kalamazoo	Kalamazoo	9,552	6,604	187	94	830,369	577,000 00	20	199
Kalkaska	Kalkaska	323	320	180	70	25,000	3,000 00	2	10
Kendall	Van Buren	61	44	180	64	1,000	....	......	1
Kent City	Kent	169	123	190	98	13,300	2,700 00	1	5
Kilmanagh	Huron	171	105	180	60	2,000	....	1	1
Kinde	Huron	182	152	200	77	2,800	2,400 00	1	2
Kingsley	Grand Traverse	171	170	180	78	7,000	1,550 00	1	4
Kingston	Tuscola	137	133	200	79	7,000	500 00	1	3
Kochville Tp. 6 fr	Saginaw	113	77	180	74	1,600	....	......	2
Laingsburg	Shiawassee	140	126	200	90	5,000	231 21	3	4
Lake Ann	Benzie	89	82	180	49	4,000	....	1	1
Lake City	Missaukee	281	264	180	86	17,000	4,000 00	1	7
Lake Linden	Houghton	1,849	630	200	86	38,000	....	3	29
Lake Odessa	Ionia	342	315	189	95	15,500	1,500 00	2	10
Lakeview	Montcalm	276	255	190	95	3,000	1,800 00	2	7
L'Anse	Baraga	642	496	200	90	54,178	19,000 00	3	13
Lansing	Ingham	6,587	4,736	185	97	450,000	50,000 00	11	119
Lapeer	Lapeer	639	601	200	93	35,000	....	2	18
Lawrence	Van Buren	194	161	180	92	5,000	418 17	1	7
Lawton	Van Buren	209	178	180	90	13,000	5,236 06	2	6
Leavitt Tp. 8	Oceana	121	106	180	80	5,000	2,500 00	1	2
Lennon	Shiawassee	97	72	200	81	4,000	2,500 00	1	2
Lenox	Macomb	386	297	200	81	17,000	5,167 62	1	11
Leonard	Oakland	130	91	200	79	5,000	470 00	1	2
Leroy	Osceola	165	127	180	68	5,000	....	1	4
Leslie	Ingham	254	200	200	92	20,000	....	1	8
Levering	Emmet	119	106	120	90	3,500	1,000 00	1	3
Lexington	Sanilac	144	126	200	94	10,000	....	1	4
Lincoln Tp. 2	Huron	107	74	200	76	1,200	....	......	2
Lincoln Tp. 4	Berrien	121	72	160	76	4,000	....	1	1
Linden	Genesee	158	135	200	94	7,000	....	1	5
Lisbon	Ottawa	88	57	180	88	3,000	350 00	......	2
Lupton	Ogemaw	106	88	180	50	4,000	400 00	1	2
Litchfield	Hillsdale	169	129	180	80	10,000	700 00	1	5
Lowell	Kent	498	402	200	78	18,000	....	2	16
Lucas	Missaukee	108	83	180	79	2,000	....	......	3
Ludington	Mason	2,813	1,748	190	97	275,000	30,000 00	5	51
Lum	Lapeer	106	89	200	66	2,000	....	1	1
Luther	Lake	255	192	190	83	15,000	6,093 63	2	4
Lyons	Ionia	157	131	180	97	3,000	10,000 00	1	4
Mackinac Island	Mackinac	210	151	180	89	12,000	6,500 00	2	2
Mackinaw City	Cheboygan	197	163	200	76	6,500	2,200 00	2	3
Macomb Tp. 2 fr	Macomb	97	42	180	58	750	....	1	......
Mancelona	Antrim	500	467	179	86	27,337	....	2	15
Manchester	Washtenaw	291	231	200	96	20,000	2,040 52	2	9
Manistee	Manistee	3,792	1,890	200	96	157,000	31,400 00	7	62
Manistique	Schoolcraft	1,505	953	200	95	75,000	....	3	31
Manton	Wexford	304	332	180	82	25,000	3,000 00	1	9
Maple Rapids	Clinton	141	135	190	70	15,000	11,003 43	1	4
Marcellus	Cass	207	213	171	98	10,000	1,475 00	1	7
Marine City	St. Clair	1,078	577	200	95	60,000	10,637 57	2	16
Marion	Osceola	271	212	190	90	12,000	1,402 16	2	4
Marion Tp. 4 fr	Sanilac	66	55	200	60	2,000	111 57	......	2
Marlette	Sanilac	330	310	200	94	20,000	4,500 00	2	8
Marquette	Marquette	3,337	1,981	195	77	302,575	60,000 00	7	62

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
130	1,230	$17,550 00	$78,285 70	$135 00	$63 64	$95,835 70	$214,074 39	96	$2,215 10
9	18	675 00	837 00	75 00	46 50	1,512 00	1,896 85	6	98 00
9	76	1,050 00	3,850 00	116 67	50 65	4,900 00	6,410 55	......	....
9	18	810 00	765 00	90 00	42 50	1,575 00	2,458 47	2	72 00
10	90	1,075 00	4,500 00	107 50	50 00	5,575 00	7,687 08	50	915 00
190	1,891	30,494 90	96,316 10	160 49	50 93	126,811 00	264,213 67	69	2,478 66
18	89	1,500 00	4,475 80	83 33	50 39	5,975 80	8,279 10	26	376 84
....	9	....	450 00	....	50 00	450 00	871 54	3	....
10	41	1,000 00	2,002 00	100 00	48 83	3,002 00	4,219 30	49	723 64
9	9	675 00	450 00	75 00	50 00	1,125 00	1,330 90	......	....
10	20	800 00	950 00	80 00	47 50	1,750 00	2,582 59	12	63 75
9	36	900 00	1,710 00	100 00	47 50	2,610 00	3,191 91	16	278 00
10	30	750 00	1,270 00	75 00	42 33	2,020 00	2,715 08	4	272 25
....	18	....	882 00	....	46 77	882 00	1,225 11	2	....
20	30	1,427 50	1,407 50	71 37	46 90	2,835 00	3,584 98	23	300 65
9	9	360 00	360 00	40 00	40 00	720 00	923 04	......	....
9	63	950 00	3,137 00	105 55	49 79	4,087 00	6,276 29	35	523 40
30	272	4,300 00	17,296 75	143 33	63 59	21,596 75	36,184 38	......	....
19	95	1,800 00	4,417 76	94 73	46 50	6,217 76	8,428 69	65	1,091 77
19	67	1,665 00	3,087 50	87 63	46 08	4,752 50	6,285 06	69	1,286 71
30	130	3,250 00	6,900 00	108 33	53 08	10,150 00	17,965 24	......	....
105	1,130	13,060 00	74,931 90	124 38	66 31	87,991 90	139,340 46	174	2,741 98
20	180	2,300 00	9,770 65	115 00	54 28	12,070 65	18,653 08	63	1,049 55
9	58	1,000 00	3,015 00	111 11	51 98	4,015 00	5,622 69	50	1,038 00
18	50	1,900 00	2,147 50	105 55	42 95	4,047 50	7,189 14	31	474 30
9	18	675 00	810 00	75 00	45 00	1,485 00	2,524 65	9	81 49
10	19	700 00	748 75	70 00	39 40	1,448 75	4,479 47	17	276 81
10	110	1,050 00	5,550 00	105 00	50 45	6,600 00	9,099 23	26	364 00
10	20	650 00	850 00	65 00	42 50	1,500 00	2,161 57	2	9 75
9	36	720 00	1,620 00	80 00	45 00	2,340 00	2,873 19	10	194 00
10	80	1,200 00	3,985 00	120 00	49 81	5,185 00	7,174 45	66	1,728 70
9	27	765 00	1,260 00	85 00	46 67	2,025 00	2,710 40	10	78 89
10	40	900 00	2,075 00	90 00	51 87	2,975 00	3,792 22	13	40 00
....	16	....	749 50	....	46 84	749 50	1,008 05	12	27 41
8	8	500 00	360 00	62 50	45 00	860 00	986 83	......	....
10	50	850 00	2,275 00	85 00	45 50	3,125 00	3,903 64	26	401 78
....	18	....	1,080 00	....	60 00	1,080 00	1,596 00	3	12 00
9	18	675 00	633 00	75 00	35 16	1,308 00	2,188 67	......	....
9	45	1,000 00	2,120 00	111 11	47 11	3,120 00	3,942 08	34	575 34
20	152	2,000 00	6,050 00	100 00	39 80	8,050 00	11,712 82	87	1,363 27
....	27	....	1,350 00	....	50 00	1,350 00	1,819 78	2	....
48	484	5,037 40	27,973 84	104 94	57 79	33,011 24	48,233 24	28	485 00
10	10	650 00	400 00	65 00	40 00	1,050 00	1,563 87	6	33 00
19	38	990 00	1,710 00	52 10	45 00	2,700 00	3,762 55	19	233 50
9	36	765 00	1,732 50	85 00	48 12	2,497 50	3,604 62	19	220 33
18	18	1,775 00	1,080 00	98 61	60 00	2,855 00	12,031 33	......	....
10	30	700 00	1,700 00	70 00	56 66	2,400 00	3,644 66	4	....
9	....	540 00	....	60 00	....	540 00	634 46	......	....
18	135	1,775 00	7,279 98	98 61	53 92	9,054 98	11,951 90	29	141 02
20	80	1,750 00	3,582 50	87 50	44 78	5,332 50	6,504 57	30	618 00
70	620	8,400 00	37,771 36	120 00	60 92	46,171 36	66,421 94	69	1,908 70
30	310	4,100 00	18,250 00	136 66	58 87	22,350 00	34,469 05	19	360 00
9	81	1,000 00	3,825 00	111 11	47 22	4,825 00	6,958 25	34	616 75
10	38	850 00	2,000 00	85 00	52 63	2,850 00	14,027 94	22	324 98
9	63	1,000 00	3,302 50	111 11	52 40	4,302 50	7,762 29	42	440 50
20	160	2,200 00	7,772 85	110 00	48 58	9,972 85	16,892 63	15	138 00
18	36	1,475 00	1,842 50	81 94	51 18	3,317 50	4,724 36	26	225 39
....	12	....	620 00	....	51 67	620 00	898 23	......	....
20	80	1,900 00	4,250 00	95 00	53 13	6,150 00	8,246 39	54	908 50
70	620	10,050 00	40,087 75	143 57	64 65	50,137 75	79,513 28	......	....

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Marshall	Calhoun	943	683	190	95	$125,000	$18,208 56	3	27
Martin	Allegan	108	82	180	82	15,000	7,000 00	1	4
Marysville	St. Clair	135	69	200	72	1,000	....	1	1
Mason	Ingham	396	378	200	96	20,000	6,000 00	2	12
Masonville Tp	Delta	578	476	181	86	54,800	15,500 00	1	17
Matchwood Tp	Ontonagon	182	130	180	90	5,400	8,000 00	2	5
Mattawan	Van Buren	206	162	180	86	16,000	9,050 76	2	4
Mayville	Tuscola	181	151	200	83	11,000	1,000 00	1	4
McBain	Missaukee	224	189	180	92	6,000	1,000 00	1	6
McBride	Montcalm	128	107	190	67	3,500	....	1	2
McMillan Tp	Luce	690	613	180	96	83,500	22,000 00	3	19
McMillan Tp	Ontonagon	260	160	180	88	7,600	....	2	5
Mecosta	Mecosta	122	87	180	77	2,600	....	1	2
Memphis	Macomb	187	160	200	91	5,000	1,380 00	1	5
Mendon	St. Joseph	182	161	190	94	25,000	13,525 20	1	7
Menominee	Menominee	3,527	2,357	190	95	200,000	4,674 62	7	62
Mesick	Wexford	183	167	180	88	5,000	900 00	1	3
Metamora	Lapeer	93	95	200	89	5,000	....	1	3
Michigamme	Marquette	225	209	199	88	10,000	....	1	7
Middleton	Gratiot	120	104	175	81	5,500	551 50	1	2
Middleville	Barry	106	190	200	98	15,000	731 62	2	6
Midland	Midland	759	676	189	93	65,000	40,612 00	2	20
Milan	Washtenaw	346	298	180	83	20,000	7,200 00	1	8
Milford	Oakland	228	189	200	95	2,000	....	1	7
Millbrook	Mecosta	100	82	180	68	6,050	1,950 00	1	1
Millburg	Berrien	124	95	160	90	2,500	....	1	2
Millersburg	Presque Isle	136	109	200	80	....	1,213 21	1	3
Millington	Tuscola	222	201	200	93	15,000	3,500 00	1	6
Minden City	Sanilac	175	132	180	77	6,000	575 00	1	2
Monguagon Tp. 3	Wayne	207	138	200	83	12,000	1,600 00	1	3
Monitor Tp. 6 fr	Bay	133	108	180	70	3,500	900 00	.....	2
Monroe	Monroe	1,983	941	190	91	175,000	111,516 65	4	24
Montague	Muskegon	204	169	180	96	18,000	....	1	6
Montgomery	Hillsdale	125	106	175	86	10,000	2,550 00	2	5
Montrose	Genesee	132	120	200	94	6,400	5,870 00	1	3
Morenci	Lenawee	337	282	180	70	40,000	22,000 00	2	10
Morley	Mecosta	135	114	190	74	5,000	630 34	1	2
Morrice	Shiawassee	109	103	200	94	7,500	400 00	1	4
Moscow	Hillsdale	59	59	180	76	1,000	320 43	2	1
Mt. Clemens	Macomb	2,303	1,216	200	94	200,000	30,500 00	4	35
Mt. Morris	Genesee	224	172	200	81	7,200	....	1	4
Mt. Pleasant	Isabella	1,118	549	190	94	61,000	20,300 00	5	16
Muir	Ionia	91	82	180	87	5,000	234 28	1	4
Mulliken	Eaton	114	98	180	77	3,000	550 00	1	2
Munising Tp	Alger	1,012	797	200	89	75,000	....	4	24
Muskegon	Muskegon	6,622	4,574	194	96	801,901	237,750 00	21	136
Muskegon Heights	Muskegon	565	457	195	94	50,000	10,000 00	1	13
Napoleon	Jackson	123	114	190	96	7,000	....	1	3
Nashville	Barry	325	232	200	95	26,000	5,300 00	2	9
Negaunee	Marquette	2,980	1,678	200	94	241,000	85,000 00	7	41
Newaygo	Newaygo	431	386	200	80	12,000	972 69	2	9
New Baltimore	Macomb	215	168	200	88	20,000	500 00	1	8
New Buffalo	Berrien	167	129	180	77	4,000	....	2	2
New Era	Oceana	172	131	180	92	6,000	1,915 00	1	3
New Haven	Macomb	130	102	200	88	3,000	850 00	1	2
New Holland	Ottawa	149	91	200	86	2,000	5,500 00	1	1
New Hudson	Oakland	39	26	190	82	2,000	53 32	1	1
New Troy	Berrien	219	174	171	87	55,000	....	2	3
Niles	Berrien	1,223	1,056	190	95	150,000	94,000 00	3	31
Noordeloos	Ottawa	101	65	180	86	2,000	....	1	1

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
29	256	$3,850 00	$14,400 00	$132 76	$56 25	$18,250 00	$40,472 41	65	$1,229 41
9	36	750 00	1,822 50	83 33	50 62	2,572 50	4,024 69	30	274 00
10	10	900 00	400 00	90 00	40 00	1,300 00	1,632 50	......	....
20	120	1,150 00	7,784 00	57 50	64 86	8,934 00	12,948 23	95	1,430 91
10	150	1,200 00	7,607 75	120 00	50 71	8,807 75	14,500 17	14	356 00
18	45	1,305 00	2,250 00	72 50	50 00	3,555 00	10,036 78	......	....
16	36	970 00	1,485 00	60 62	41 25	2,455 00	16,179 07	3	10 00
10	40	900 00	1,850 00	90 00	46 25	2,750 00	3,429 50	47	784 00
9	54	950 00	2,382 50	105 55	44 11	3,332 50	4,459 47	3	65 50
10	19	712 50	760 00	71 25	40 00	1,472 50	1,860 61	4	23 00
30	181	3,175 75	9,800 00	105 85	54 14	12,975 75	22,847 14	11	246 00
18	45	1,251 00	2,295 00	69 50	51 00	3,546 00	5,307 03	......	....
9	18	630 00	810 00	70 00	45 00	1,440 00	1,963 31	2	14 35
10	49	900 00	2,382 50	90 00	48 62	3,282 50	4,483 72	34	289 80
9	67	1,000 00	3,581 50	111 11	53 45	4,581 50	6,309 16	46	730 94
67	589	8,959 00	38,844 22	133 71	65 94	47,803 22	67,232 95	13	244 00
9	27	700 00	1,305 00	77 77	48 33	2,005 00	3,202 34	8	....
10	30	750 00	1,500 00	75 00	50 00	2,250 00	2,934 43	11	110 69
10	70	1,200 08	4,000 00	120 00	57 14	5,200 00	7,545 33	4	....
9	18	630 00	810 00	70 00	45 00	1,440 00	1,940 51	15	67 50
20	60	1,600 00	2,705 00	80 00	45 08	4,305 00	3,382 11	46	690 00
39	290	1,950 00	10,128 00	50 00	34 92	12,078 00	22,340 62	120	2,083 00
9	72	1,000 00	3,715 00	111 11	51 59	4,715 00	6,552 74	24	358 00
10	70	1,000 00	3,300 00	100 00	47 14	4,300 00	5,436 90	62	631 25
9	9	540 00	360 00	60 00	40 00	900 00	1,378 52	11	27 00
8	16	720 00	720 00	90 00	45 00	1,440 00	2,034 77	9	143 00
10	30	800 00	1,225 00	80 00	40 83	2,025 00	4,657 78	7	20 50
10	60	1,000 00	2,695 00	100 00	44 91	3,695 00	5,140 48	45	731 00
9	18	765 00	855 00	85 00	30 00	1,620 00	2,311 61	8	....
10	30	800 00	1,344 00	80 00	44 80	2,144 00	3,269 74	......	....
....	18	....	1,035 00	....	57 50	1,035 00	1,397 26	3	17 25
38	256	4,750 00	14,122 50	125 00	55 16	18,872 50	106,645 41	85	1,826 00
9	54	1,000 00	2,440 00	111 11	45 18	3,440 00	4,827 99	23	235 40
18	36	1,350 00	1,615 50	75 00	44 85	2,965 50	4,262 28	40	654 00
10	30	650 00	1,350 00	65 00	45 00	2,000 00	4,439 27	28	236 50
18	81	2,065 00	3,647 50	114 72	45 03	5,712 50	8,137 89	57	701 50
10	19	712 50	760 00	71 25	40 00	1,472 50	2,793 67	13	58 80
10	40	800 00	1,750 00	80 00	43 75	2,550 00	3,137 99	18	239 31
16	9	757 50	405 00	47 31	45 00	1,162 50	1,427 03	2	17 04
40	350	4,950 00	20,096 00	123 75	57 41	25,046 00	38,375 84	51	838 57
10	40	950 00	2,000 00	95 00	50 00	2,950 00	5,176 95	41	748 00
48	160	4,750 00	8,892 04	98 95	59 28	13,642 04	20,340 53	69	1,069 10
9	27	810 00	1,125 00	90 00	41 62	1,935 00	2,548 82	12	144 50
9	18	540 00	765 00	60 00	42 50	1,305 00	1,774 58	4	55 00
30	182	3,030 00	11,311 38	101 00	66 55	14,341 38	21,958 77	9	....
210	1,355	25,690 50	86,644 33	122 33	63 94	112,334 83	244,120 61	52	917 32
10	125	1,100 00	6,321 26	110 00	50 57	7,421 26	31,016 43	20	184 90
9	29	750 00	1,302 50	83 33	44 89	2,052 50	2,546 78	13	138 71
20	90	1,800 00	3,900 00	90 00	43 33	5,700 00	8,781 52	49	824 00
70	410	7,595 90	23,963 28	108 51	58 44	31,559 18	53,465 38	4	....
20	90	1,600 00	3,900 00	80 00	43 33	5,500 00	8,086 14	18	188 50
10	79	1,000 00	2,375 00	100 00	30 06	3,375 00	5,904 09	27	232 50
18	18	1,080 00	900 00	60 00	50 00	1,980 00	2,589 38	7	140 00
9	26	607 50	1,317 00	67 50	50 65	1,924 50	3,355 83	5	51 50
10	20	800 00	1,100 00	80 00	55 00	1,900 00	2,546 68	14	160 27
10	10	750 00	450 00	75 00	45 00	1,200 00	4,303 58	......	....
9	10	570 00	332 50	65 00	33 25	902 50	1,126 13	3	19 75
16	27	1,045 00	1,215 00	59 06	45 00	2,260 00	4,084 82	20	27 75
38	294	3,750 00	16,452 50	98 68	55 96	20,202 50	73,517 57	49	1,004 47
9	10	450 00	450 00	50 00	45 00	900 00	1,219 75	1	21 00

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
North Adams	Hillsdale	112	88	190	83	$10,000	$323 75	2	5
North Branch	Lapeer	223	179	200	92	20,000	9,325 00	2	6
North Muskegon	Muskegon	89	79	200	83	10,000	712 93	1	1
Northport	Leelanau	217	187	180	84	20,000	15,408 72	1	5
North Star	Gratiot	98	69	190	83	3,000	250 00	1	2
Northville	Wayne	422	357	200	91	32,000	5,500 00	2	12
Norway	Dickinson	1,794	1,393	190	96	100,000	37,500 00	2	37
Norway Tp	Dickinson	656	466	200	96	30,500	6,750 00	2	12
Nunica	Ottawa	138	121	180	83	2,000	200 00	2	4
Oakley	Saginaw	70	54	180	93	1,500	....	1	1
Okemos	Ingham	98	69	180	40	3,000	....	2	1
Olivet	Eaton	181	147	189	92	10,000	....	1	6
Omer	Arenac	162	120	200	80	6,000	500 00	2	2
Onaway	Presque Isle	1,005	763	200	56	15,000	3,000 00	2	19
Onekama	Manistee	145	131	180	79	3,500	609 59	1	3
Onondaga	Ingham	96	68	180	96	3,000	275 00	1	2
Ontonagon Tp	Ontonagon	727	666	195	83	50,000	7,157 00	2	25
Orion	Oakland	209	171	200	92	15,000	300 00	2	5
Ortonville	Oakland	131	112	200	90	10,000	8,000 00	1	3
Osceola Tp	Houghton	2,768	1,954	200	95	43,500	10,000 00	4	69
Oscoda	Iosco	369	274	172	82	25,000	122 81	1	7
Osseo	Hillsdale	76	68	180	98	2,000	800 00	2	3
Otisville	Genesee	147	142	200	90	3,000	500 00	1	4
Otsego	Allegan	714	630	185	80	73,800	38,000 00	3	23
Otter Lake	Lapeer	115	88	190	84	1,100	250 00	1	1
Overisel	Allegan	82	53	180	98	2,000	....	......	2
Ovid	Clinton	275	277	190	95	35,000	16,900 00	1	12
Owosso	Shiawassee	2,505	1,844	198	94	250,000	20,152 82	6	47
Oxford	Oakland	281	287	200	91	20,000	207 79	2	7
Palmyra	Lenawee	111	82	180	87	3,000	500 00	1	2
Palo	Ionia	61	51	198	93	4,000	461 00	2	2
Paris Tp. 1	Kent	169	122	180	69	3,000	....	1	2
Parma	Jackson	154	142	190	90	12,000	1,350 00	1	4
Paw Paw	Van Buren	430	349	190	93	25,000	6,000 00	2	12
Pellston	Emmet	334	332	180	66	21,000	13,500 00	1	9
Pentwater	Oceana	320	274	190	82	10,000	200 00	1	9
Perry	Shiawassee	221	185	196	85	12,000	4,800 00	2	4
Petersburg	Monroe	222	176	179	98	10,000	....	1	5
Petoskey	Emmet	1,505	1,063	180	97	60,000	3,000 00	4	29
Pewamo	Ionia	107	84	180	98	10,000	525 79	2	2
Pierson	Montcalm	107	84	180	85	2,500	....	1	1
Pigeon	Huron	353	240	200	91	10,000	100 00	1	6
Pinckney	Livingston	132	114	200	95	12,000	....	2	3
Pinconning	Bay	402	242	200	79	20,000	13,600 00	1	6
Pine Run	Genesee	72	57	180	62	1,100	....	......	1
Pinnebog	Huron	141	124	200	78	2,250	100 00	1	1
Pittsford	Hillsdale	155	126	190	80	10,000	195 07	1	4
Plainfield Tp. 9 fr	Kent	182	151	200	78	9,000	2,000 00	1	4
Plainwell	Allegan	452	427	190	77	4,000	8,500 00	1	12
Plymouth	Wayne	482	435	200	95	35,000	9,500 00	1	15
Pontiac	Oakland	3,364	2,854	196	93	345,000	310,000 00	4	75
Port Austin	Huron	251	175	200	81	7,000	3,292 67	......	7
Port Hope	Huron	121	101	200	89	2,000	950 00	1	2
Port Huron	St. Clair	5,514	3,111	190	97	600,000	....	5	89
Portland	Ionia	428	350	190	86	25,000	2,400 00	1	12
Port Sanilac	Sanilac	105	97	180	83	2,000	....	......	3
Potterville	Eaton	142	139	180	92	8,500	8,900 00	3	3
Prattville	Hillsdale	100	83	180	94	5,500	2,400 00	2	2
Prescott	Ogemaw	153	136	199	60	1,000	....	1	1
Quincy	Branch	249	335	190	80	15,000	1,500 00	2	7

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
18	38	$1,800 00	$1,885 00	$100 00	$49 60	$3,685 00	$4,765 69	46	$807 80
10	60	1,080 00	2,800 00	108 00	46 66	3,880 00	6,082 59	71	857 02
10	10	600 00	450 00	60 00	45 00	1,050 00	2,023 67	......	....
9	45	855 00	2,070 00	95 00	46 00	2,925 00	6,541 42	10	222 00
9	19	760 00	855 00	84 44	45 00	1,615 00	1,960 07	22	130 75
20	120	2,000 00	5,578 00	100 00	46 48	7,578 00	10,804 39	48	600 00
19	262	3,000 00	20,885 25	157 89	79 71	23,885 25	37,622 44	10	589 22
20	120	1,800 00	6,700 00	90 00	55 83	8,500 00	14,651 27	1	....
9	27	680 00	1,080 00	75 55	40 00	1,760 00	2,132 44	14	169 75
9	9	540 00	315 00	60 00	35 00	855 00	1,062 73	3	87 00
16	11	997 50	495 00	62 34	45 00	1,492 50	1,878 09	15	92 00
10	57	1,000 00	3,050 00	100 00	53 50	4,050 00	5,500 51	31	507 19
19	20	1,145 62	850 00	60 29	42 50	1,995 63	2,540 10	3	....
20	179	1,950 00	8,440 00	97 50	47 15	10,390 00	15,890 08	13	205 50
9	27	800 00	1,215 00	88 88	45 00	2,015 00	3,015 09	10	236 84
9	18	585 00	855 00	65 00	47 50	1,440 00	1,863 93	9	120 15
20	250	2,550 00	14,000 00	127 50	56 00	16,550 00	26,826 69	......	....
20	50	1,497 50	2,175 00	74 87	43 50	3,672 50	5,085 11	17	353 15
10	30	700 00	1,200 00	70 00	40 00	1,900 00	3,022 73	14	102 38
40	616	5,400 00	38,060 80	135 00	61 78	43,460 80	70,648 37	11	196 00
10	141	427 50	3,265 00	42 75	23 15	3,692 50	4,892 22	3	....
12	24	800 00	1,115 00	66 67	46 46	1,915 00	2,693 18	17	175 50
10	40	750 00	1,890 00	75 00	47 25	2,640 00	3,413 03	21	193 90
29	219	3,150 00	10,850 00	108 62	49 54	14,000 00	21,859 41	43	959 34
9	10	570 00	427 50	63 33	42 75	997 50	1,321 55	6	92 50
....	18	....	783 00	....	43 50	783 00	1,049 13	4	6 00
10	98	1,200 00	4,926 25	120 00	50 26	6,126 25	9,251 52	83	1,399 36
60	470	6,650 00	27,413 91	110 83	58 32	34,063 91	49,627 71	62	1,266 73
20	70	1,875 00	3,551 25	93 75	50 73	5,426 25	7,649 12	33	557 25
9	9	600 00	495 00	66 67	55 00	1,095 00	1,718 60	6	72 00
20	20	1,400 00	800 00	70 00	40 00	2,200 00	3,468 90	16	133 19
9	19	450 00	1,055 00	50 00	55 52	1,505 00	2,673 49	1	9 00
10	38	1,000 00	1,975 00	100 00	51 97	2,975 00	4,234 63	27	305 11
19	114	2,175 00	6,241 25	114 47	54 74	8,416 25	13,685 74	73	1,300 50
9	72	1,100 08	3,998 74	122 22	55 54	5,098 82	7,959 81	16	172 50
9	86	1,200 00	4,522 50	133 33	52 50	5,722 50	7,821 91	17	102 00
20	40	1,500 00	1,925 00	75 00	48 12	3,425 00	4,841 54	13	149 34
9	45	720 00	1,863 00	80 00	41 40	2,583 00	3,399 17	31	361 73
36	261	5,050 00	16,988 45	140 28	65 09	22,038 45	35,029 03	35	606 00
18	18	1,125 00	720 00	62 50	40 00	1,845 00	2,457 62	21	95 59
9	9	585 00	387 00	65 00	43 00	972 00	1,486 60	5	26 00
10	58	1,000 00	2,694 25	100 00	46 45	3,694 25	5,101 83	22	317 00
20	30	1,350 00	1,300 00	67 50	43 33	2,650 00	3,381 29	30	398 85
10	60	1,105 00	3,530 00	110 50	58 83	4,635 00	6,903 87	12	80 00
....	9	....	405 00	....	45 00	405 00	504 18	......	....
10	10	850 00	500 00	85 00	50 00	1,350 00	1,569 52	3	30 62
10	88	1,000 00	1,710 00	100 00	45 00	2,710 00	3,329 96	50	751 25
10	30	700 00	1,372 50	70 00	45 75	2,072 50	3,394 67	5	36 00
10	114	1,200 00	5,049 25	120 00	44 29	6,249 25	9,995 56	43	844 61
20	140	2,075 00	6,512 50	103 75	46 52	8,587 50	13,827 71	47	763 10
40	750	6,050 00	44,279 12	151 25	59 03	50,329 12	130,141 82	130	1,841 56
....	60	....	3,100 00	....	51 66	3,100 00	4,329 74	86	....
10	20	850 00	750 00	85 00	37 50	1,600 00	2,095 74	2	....
48	845	7,545 00	50,701 49	163 43	60 00	58,246 49	92,816 34	40	500 10
10	114	1,200 00	7,300 00	120 00	64 03	8,500 00	12,640 78	55	942 50
....	27	....	1,305 00	....	48 33	1,305 00	1,574 47	4	14 75
13	27	875 00	1,240 00	67 30	45 92	2,115 00	3,833 12	31	283 02
18	18	900 00	720 00	50 00	40 00	1,620 00	4,309 16	6	130 00
10	10	597 00	398 00	59 70	39 80	995 00	1,262 80	2	....
18	67	1,700 00	3,288 75	94 44	49 08	4,988 75	6,978 37	63	1,257 11

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Rapid City	Kalkaska	106	113	180	81	$8,000	$1,525 00	1	3
Ravenna	Muskegon	169	140	180	91	13,000	1,250 00	1	4
Reading	Hillsdale	256	241	180	94	25,000	15,000 00	2	6
Reed City	Osceola	523	375	180	96	26,000	2,050 00	2	12
Reese	Tuscola	191	120	200	91	8,000	157 78	1	3
Remus	Mecosta	141	113	180	92	6,000	1,050 00	1	3
Republic Tp	Marquette	903	682	200	75	55,000	30,200 00	1	20
Richland	Kalamazoo	84	65	180	91	4,600	300 00	1	4
Richmond (included under Lenox)	Macomb	......	......	......	...	....	....	.....	.....
Riverdale	Gratiot	90	87	180	87	4,300	1,475 00	1	2
River Rouge	Wayne	1,379	1,132	200	70	175,000	143,600 00	3	33
Rochester	Oakland	413	328	200	88	25,000	2,200 00	1	8
Rockford	Kent	285	241	200	91	2,300	....	1	8
Rockland Tp	Ontonagon	424	366	200	93	27,000	5,000 00	3	11
Rockwood	Wayne	78	64	180	81	3,000	372 81	1	1
Rogers	Presque Isle	378	301	180	82	8,000	1,265 21	2	5
Romeo	Macomb	404	324	200	79	35,000	2,750 00	1	12
Romulus	Wayne	99	71	180	76	3,000	1,300 00	1	2
Roscommon	Roscommon	107	95	200	93	3,000	2,200 00	1	4
Rose City	Ogemaw	266	226	200	77	5,000	2,500 00	1	5
Royal Oak	Oakland	506	438	200	78	20,000	12,600 00	2	11
Saganing	Arenac	116	83	180	78	3,200	600 00	1	1
Saginaw E. S	Saginaw	8,599	4,655	190	95	735,642	22,000 00	20	140
Saginaw, W. S	Saginaw	6,258	3,312	200	96	347,095	51,000 00	8	85
St. Charles	Saginaw	573	506	200	77	30,000	1,000 00	1	12
St. Clair	St. Clair	697	443	200	94	35,000	....	1	14
St. Ignace	Mackinac	630	439	189	92	25,000	17,500 00	4	9
St. James Tp. 1	Charlevoix	175	158	180	54	3,000	....	.....	4
St. Johns	Clinton	807	785	200	95	50,000	....	5	24
St. Joseph	Berrien	1,723	1,039	179	91	100,000	4,500 00	4	31
St. Louis	Gratiot	630	551	185	93	30,000	8,000 00	3	15
Salem	Washtenaw	62	41	180	91	2,000	....	.....	2
Saline	Washtenaw	203	175	200	95	20,000	....	1	7
Sand Lake	Kent	133	105	180	85	3,000	50 00	1	3
Sandusky	Sanilac	374	326	190	85	25,000	18,960 78	1	6
Sanilac Tp. 3	Sanilac	53	31	180	75	1,400	....	1	....
Sanilac Tp. 8 fr	Sanilac	46	35	180	77	700	60 00	.....	2
Saranac	Ionia	244	179	200	94	20,000	600 00	1	7
Saugatuck	Allegan	180	146	180	78	15,300	3,805 95	2	4
Sault St. Marie	Chippewa	3,644	2,554	197	95	255,000	25,000 00	11	51
Schoolcraft	Kalamazoo	180	185	180	96	24,000	....	2	6
Scotts	Kalamazoo	110	96	180	98	3,000	....	.....	3
Scottville	Mason	351	308	190	92	25,000	10,860 21	2	7
Sebewaing	Huron	535	360	192	71	27,000	6,852 93	1	9
Shelby	Oceana	364	330	190	95	15,000	1,500 00	1	12
Shepherd	Isabella	250	208	180	92	20,000	12,330 00	1	8
Sheridan	Montcalm	155	107	180	91	5,400	800 00	1	4
Sherman	Wexford	139	96	180	75	4,000	....	1	3
Sherman Tp. 2	Osceola	135	119	180	72	6,000	250 00	1	2
Sherwood	Branch	120	127	200	95	6,000	850 00	2	2
Soule	Huron	111	54	200	72	1,600	485 00	1	1
South Frankfort	Benzie	109	175	200	71	8,000	....	1	6
South Haven	Van Buren	974	750	190	96	100,000	3,353 86	5	26
South Lyon	Oakland	156	111	190	95	3,000	1,350 00	1	4
Spaulding Tp	Menominee	640	515	200	81	30,400	500 00	1	15
Sparta	Kent	429	405	200	80	24,000	13,000 00	1	12
Spring Lake	Ottawa	232	162	190	85	6,000	....	1	5
Springport	Jackson	136	125	197	98	5,000	....	1	4
Springwells Tp. 3	Wayne	455	241	200	67	18,000	16,000 00	1	5
Stambaugh Tp	Iron	1,110	963	200	85	120,000	66,219 46	5	26

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women	Men.	Women.				
9	27	$540 00	$1,170 00	$60 00	$43 33	$1,710 00	$2,338 55	13	$158 10
9	35	675 00	1,541 25	75 00	44 03	2,216 25	12,692 46	9	146 00
18	54	1,900 00	2,925 00	105 55	54 16	4,825 00	7,898 71	58	1,003 41
19	114	1,900 00	5,676 75	100 00	49 79	7,576 75	9,494 42	28	525 00
10	30	900 00	1,300 00	90 00	43 33	2,200 00	3,480 41	13	267 75
9	19	720 00	843 00	80 00	44 37	1,563 00	2,236 58	8	138 00
10	170	1,600 00	9,150 00	160 00	53 82	10,750 00	18,647 54	......	......
5	32	372 00	1,550 00	74 40	48 44	1,922 00	2,739 97	10	142 13
......	......	......	......	......	......	......	......	......	......
9	18	585 00	900 00	65 00	50 00	1,485 00	2,211 56	1	9 50
30	330	4,150 00	18,342 91	138 33	55 58	22,492 91	42,823 38	8	96 00
10	80	1,000 00	3,825 00	100 00	47 81	4,825 00	6,494 41	49	819 00
10	69	950 00	2,995 25	95 00	43 40	3,945 25	6,757 98	76	973 70
30	110	2,400 00	6,327 50	80 00	57 52	8,727 50	13,127 68	......	......
9	9	540 00	405 00	60 00	45 00	945 00	1,412 52	2	......
18	39	1,440 00	1,805 00	80 00	46 28	3,245 00	4,770 66	3	54 00
10	106	1,300 00	6,114 00	130 00	57 68	7,414 00	10,063 10	48	801 80
9	18	630 00	765 00	70 00	42 50	1,395 00	1,605 26	7	63 00
10	40	800 00	1,900 00	80 00	47 50	2,700 00	3,243 52	15	62 00
10	50	900 00	2,190 00	90 00	43 80	3,090 00	4,021 49	4	10 00
20	102	1,953 30	5,768 75	97 66	56 55	7,722 05	16,714 31	24	361 37
9	9	450 00	405 00	50 00	45 00	855 00	1,192 43	3	22 50
200	1,400	28,000 00	90,756 68	140 00	64 82	118,756 68	180,043 69	132	4,593 55
80	840	11,400 00	50,617 17	142 50	60 25	62,017 17	100,964 50	35	989 50
10	120	1,200 00	5,752 60	120 00	47 93	6,952 60	9,706 11	33	406 00
10	140	1,300 00	7,925 00	100 00	56 60	9,225 00	14,091 17	25	299 00
40	90	3,450 00	5,150 00	86 25	57 22	8,600 00	11,280 87	2	......
......	36	......	1,400 00	......	38 88	1,400 00	1,794 75	3	60 00
50	240	4,850 00	13,627 95	97 00	56 78	18,477 95	25,232 61	93	1,881 00
36	279	4,625 00	15,952 30	128 47	57 17	20,577 30	26,944 12	34	791 66
29	142	3,150 00	7,775 00	108 62	54 75	10,925 00	16,413 82	65	941 07
......	18	......	765 00	......	42 50	765 00	983 54	1	9 00
10	70	1,150 00	3,000 00	115 00	42 85	4,150 00	5,487 66	40	650 17
9	27	675 00	1,035 00	75 00	38 33	1,710 00	2,052 86	17	164 00
10	57	1,000 00	2,968 75	100 00	52 08	3,968 75	14,971 31	21	329 00
9	......	540 00	......	60 00	......	540 00	692 81	7	......
......	18	......	738 00	......	41 00	738 00	1,048 35	2	......
10	70	1,050 00	3,450 00	105 00	49 28	4,500 00	6,087 33	76	988 70
18	32	1,477 00	1,440 00	82 05	45 00	2,917 00	6,273 50	8	17 00
110	510	12,548 63	34,406 15	114 08	67 46	46,954 78	75,910 62	69	650 00
18	54	1,590 00	2,929 50	88 33	54 25	4,519 50	5,922 93	30	455 35
......	27	......	1,485 00	......	55 00	1,485 00	2,495 60	18	240 82
19	65	1,567 50	3,063 00	82 50	47 12	4,630 50	16,031 04	47	634 55
10	80	1,200 00	3,881 25	120 00	48 52	5,081 25	7,341 28	14	41 00
9	114	1,000 00	5,704 00	111 11	50 03	6,704 00	9,014 94	39	451 00
9	72	950 00	3,442 50	105 55	47 81	4,392 50	9,454 35	40	513 42
9	36	810 00	1,530 00	90 00	42 50	2,340 00	2,919 09	36	396 75
9	27	720 00	1,242 00	80 00	46 00	1,962 00	2,703 47	3	9 00
9	18	675 00	1,035 00	75 00	57 50	1,710 00	3,007 98	6	66 00
20	20	1,350 00	989 00	67 50	49 45	2,339 00	2,819 97	21	257 00
10	10	630 00	350 00	63 00	35 00	980 00	1,479 87		..
10	60	800 00	2,750 00	80 00	45 83	3,550 00	5,478 90	4	50 50
42	247	4,485 00	13,860 00	106 78	56 11	18,345 00	29,329 89	143	2,876 25
10	38	950 00	1,872 50	95 00	49 27	2,822 50	3,477 75	34	402 63
10	150	900 00	6,894 00	90 00	45 96	7,794 00	11,535 67	13	......
10	120	1,050 00	5,875 00	105 00	48 96	6,925 00	21,420 07	65	1,114 60
10	38	1,000 00	1,640 25	100 00	43 16	2,640 25	3,651 75	6	65 00
10	40	1,000 00	2,000 00	100 00	50 00	3,000 00	3,858 44	33	394 00
10	50	850 00	3,015 00	85 00	60 30	3,865 00	6,438 12	3	25 00
50	260	4,302 50	13,007 00	86 05	50 02	17,309 50	38,719 56	8	96 50

TABLE XVI.—*Continued.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed. Men.	Number of teachers employed. Women.
Standish	Arenac	429	332	200	70	$12,500	$7,500 00	1	9
Standish Tp. 2	Arenac	125	88	180	72	2,000	....	1	1
Stanton	Montcalm	368	301	190	92	25,000	22,845 09	2	9
Stanwood	Mecosta	127	82	180	93	2,000	500 00	1	2
Stephenson Tp	Menominee	1,037	885	180	75	15,000	1,321 89	3	21
Sterling	Arenac	198	157	200	80	4,000	512 00	1	3
Stevensville	Berrien	224	113	180	77	5,500	553 57	1	4
Stockbridge	Ingham	164	159	200	94	8,500	2,310 79	1	7
Sturgis	St. Joseph	1,043	823	190	91	90,000	18,155 00	1	23
Sumner Tp. 4 fr.	Gratiot	81	60	180	92	2,600	....	1	1
Sunfield	Eaton	112	134	190	97	4,000	400 00	1	4
Superior Tp	Chippewa	493	366	180	72	23,250	5,000 00	3	9
Sutton's Bay	Leelanau	202	94	180	88	8,500	1,343 42	1	3
Taymouth Tp. 8	Saginaw	102	64	180	89	1,500	425 00	1	1
Tallmadge Tp. 1 fr	Ottawa	114	89	180	82	3,000	650 00	1	1
Tawas City	Iosco	392	237	194	94	8,000	....	1	7
Tecumseh	Lenawee	511	442	182	95	32,000	2,356 55	2	15
Tekonsha	Calhoun	180	155	190	95	30,000	2,800 00	1	6
Thompsonville	Benzie	293	262	180	75	4,200	2,550 00	1	7
Thornville	Lapeer	57	44	180	68	2,000	....	......	2
Three Oaks	Berrien	413	308	180	91	20,000	....	1	9
Three Rivers	St. Joseph	1,059	912	190	96	80,000	13,200 00	5	30
Tilden Tp	Marquette	528	389	198	92	30,000	8,500 00	3	13
Traverse City	Grand Traverse	2,742	2,493	190	94	255,388	20,000 00	9	56
Trenton	Wayne	439	412	200	63	20,000	20,000 00	1	10
Trufant	Montcalm	146	110	180	84	4,000	....	1	3
Turner	Arenac	188	171	200	68	3,000	1,115 05	1	3
Tuscola	Tuscola	81	54	180	88	1,500	....	1	1
Tustin	Osceola	118	105	177	88	6,000	....	1	4
Twining	Arenac	173	133	180	92	6,000	....	......	4
Tyre	Sanilac	141	113	200	54	3,000	400 00	......	2
Ubly	Huron	177	162	200	67	4,500	....	1	2
Union City	Branch	334	263	200	95	25,000	....	3	10
Unionville	Tuscola	212	181	200	89	11,000	412 79	1	5
Utica	Macomb	221	178	200	70	20,000	12,235 00	1	4
Vandalia	Cass	119	110	180	86	7,000	700 00	2	2
Vanderbilt	Otsego	176	160	180	89	4,000	233 94	1	5
Vassar	Tuscola	472	424	200	72	25,000	3,200 00	2	13
Vermontville	Eaton	165	151	190	95	10,000	....	1	6
Vernon	Shiawassee	107	98	200	85	3,500	450 00	1	3
Vestaburg	Montcalm	89	83	180	70	1,500	....	1	2
Vicksburg	Kalamazoo	351	316	180	91	50,000	24,500 00	3	10
Vriesland	Ottawa	108	70	190	93	3,500	....	1	1
Wacousta	Clinton	81	61	180	92	1,000	....	2	2
Wakefield	Gogebic	863	780	200	92	150,000	38,947 22	5	23
Waldron	Hillsdale	121	118	180	91	8,300	1,242 26	1	4
Walker Tp. 11	Kent	268	158	180	86	5,000	1,000 00	1	4
Warren	Macomb	85	62	180	70	2,500	....	1	1
Warren Tp. 1 fr	Macomb	88	33	180	75	2,000	175 00	1	1
Washington Tp. 4 fr.	Sanilac	93	72	200	62	1,500	....	1	1
Washington Tp. 12 fr	Macomb	75	58	200	85	1,500	....	1	1
Watersmeet Tp	Gogebic	68	54	200	96	4,000	2,075 98	1	2
Watervliet	Berrien	309	276	180	93	10,000	494 17	2	7
Wayland	Allegan	164	161	180	92	7,500	....	1	4
Wayne	Wayne	442	380	200	93	35,000	25,000 00	1	12
Webberville	Ingham	142	103	180	90	10,000	8,000 00	1	3
Weidman	Isabella	152	118	180	76	6,800	....	1	3
West Branch	Ogemaw	539	469	190	92	18,000	1,756 91	2	12
Wheeler	Gratiot	100	82	177	79	4,264	3,000 00	1	2
White Cloud	Newaygo	243	208	180	85	8,000	....	1	6

TABLE XVI.—*Continued.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
10	70	$975 00	$3,468 25	$97 50	$49 54	$4,443 25	$8,081 27	26	$359 00
9	9	450 00	360 00	50 00	40 00	810 00	1,177 12	.....	....
19	86	1,448 77	4,226 28	76 25	49 14	5,675 05	9,022 30	37	612 51
9	18	675 00	765 00	75 00	42 50	1,440 00	1,748 00	8	76 50
27	189	1,904 00	8,019 15	70 51	42 43	9,923 15	15,617 56	2	....
10	30	750 00	1,300 00	75 00	43 33	2,050 00	2,657 16	5	....
9	36	720 00	1,822 50	80 00	50 62	2,542 50	3,105 81	6	104 45
10	60	900 00	3,210 00	90 00	53 50	4,110 00	6,418 21	50	1,045 65
10	228	1,500 00	12,426 88	150 00	54 50	13,926 88	36,384 43	55	666 65
9	9	585 00	450 00	65 00	50 00	1,035 00	1,763 13	2	22 50
10	38	900 00	1,852 50	90 00	48 73	2,752 50	3,958 16	31	515 00
27	81	1,980 00	3,957 00	73 33	48 85	5,937 00	9,869 83	12	....
9	27	700 00	1,215 00	77 77	45 00	1,915 00	3,242 15	5	19 00
9	9	540 00	405 00	60 00	45 00	945 00	1,194 96	11	189 90
9	9	585 00	522 00	65 00	58 00	1,107 00	1,489 62	3	33 00
10	70	1,003 03	3,270 96	100 30	46 72	4,273 99	6,158 58	12	96 29
19	143	2,500 00	7,800 00	131 57	54 54	10,300 00	16,265 40	87	1,401 40
10	57	900 00	2,482 50	90 00	43 55	3,382 50	3,979 83	43	707 50
9	63	945 00	2,855 93	105 00	45 31	3,800 93	4,777 91	18	96 80
....	18	....	720 00	....	40 00	720 00	826 11	.....	....
9	81	1,200 00	4,140 00	133 33	51 11	5,340 00	7,042 75	26	390 75
48	264	5,300 00	13,392 25	110 41	50 72	18,692 25	27,342 86	66	1,340 09
20	90	1,578 75	4,401 25	78 93	48 93	5,983 00	9,983 87	1	....
86	532	9,170 00	29,327 77	106 62	55 12	38,497 77	57,985 82	102	2,443 02
10	100	900 00	4,775 00	90 00	47 75	5,675 00	10,606 03	10	120 37
9	18	630 00	766 50	70 00	42 58	1,396 50	2,106 07	9	40 89
10	30	750 00	1,350 00	75 00	45 00	2,100 00	2,989 78	2	13 00
9	9	540 00	315 00	60 00	35 00	855 00	1,072 82	12	75 50
9	36	855 00	1,890 00	95 00	52 50	2,745 00	3,633 29	28	447 71
......	36	....	1,800 00	....	50 00	1,800 00	2,826 93	11	2 00
....	20	....	1,150 00	....	57 50	1,150 00	1,432 71	.....	....
10	20	800 00	800 00	80 00	40 00	1,600 00	2,077 66	5	100 00
20	97	2,065 00	5,300 00	103 25	54 64	7,365 00	9,947 63	69	983 16
10	40	800 00	1,650 00	80 00	41 25	2,450 00	3,121 96	23	269 00
10	40	1,000 00	2,000 00	100 00	50 00	3,000 00	4,901 86	23	414 45
18	18	1,440 00	900 00	80 00	50 00	2,340 00	2,994 01	21	237 40
9	36	700 00	1,794 90	77 78	49 86	2,494 90	3,436 17	3	20 00
10	130	1,175 00	5,925 00	117 50	45 57	7,100 00	9,294 85	42	325 10
10	57	950 00	2,744 00	95 00	48 14	3,694 00	5,057 96	50	753 30
10	30	845 75	1,326 00	84 57	44 20	2,171 75	2,914 91	9	85 95
9	18	585 00	810 00	65 00	45 00	1,395 00	2,160 22	10	124 50
27	90	2,615 00	4,547 50	96 85	50 53	7,162 50	11,921 70	46	812 00
9	10	712 50	522 50	79 17	52 25	1,235 00	1,654 10	.....	....
9	18	628 63	765 00	69 85	42 50	1,393 63	1,935 89	9	129 88
50	230	4,953 50	13,651 49	99 07	59 35	18,604 99	28,305 70	.....	....
9	36	750 00	1,665 00	83 33	46 25	2,415 00	3,905 23	49	715 72
9	36	1,035 00	1,597 50	115 00	44 36	2,632 50	3,488 46	6	23 35
9	9	495 00	337 50	55 00	37 50	832 50	1,019 59	5	4 00
9	9	475 75	374 00	52 84	41 55	849 75	1,039 98	.....	....
10	5	650 00	175 00	65 00	35 00	825 00	936 32	2	....
10	10	700 00	400 00	70 00	40 00	1,100 00	1,843 38	19	176 00
10	20	950 00	1,300 00	95 00	65 00	2,250 00	4,326 96	.....	....
18	63	1,800 00	3,290 00	100 00	52 22	5,090 00	6,362 08	42	591 49
9	36	799 92	1,845 00	88 88	51 25	2,644 92	3,657 12	41	669 50
10	110	1,100 00	5,125 00	110 00	46 59	6,225 00	10,021 03	62	956 06
9	27	675 00	1,215 00	75 00	45 00	1,890 00	10,733 40	13	29 00
9	18	720 00	871 25	80 00	48 40	1,591 25	2,567 70	10	42 00
10	114	1,950 00	5,965 00	195 00	52 32	7,915 00	9,677 70	38	621 75
9	18	540 00	720 00	60 00	40 00	1,260 00	1,755 41	2	8 00
9	53	800 00	2,535 75	88 89	47 84	3,335 75	4,603 28	16	291 54

TABLE XVI.—*Concluded.*

Districts.	Counties.	Number of children between 5 and 20 years.	Number of children that attended school during the year.	Number of days school.	Percentage of attendance.	Estimated value of school property.	Total indebtedness.	Number of teachers employed.	
								Men.	Women.
Whitehall	Muskegon	448	329	190	88	$30,000	....	2	8
White Pigeon	St. Joseph	184	167	180	87	1,800	$810 00	1	7
White Rock	Huron	60	50	180	82	1,200	170 00	......	1
Whittemore	Iosco	137	113	200	70	5,000	520 00	1	1
Williamston	Ingham	309	310	200	86	30,000	3,000 00	2	11
Winsor Tp. 1	Huron	183	135	200	87	3,000	....	1	1
Winsor Tp. 2	Huron	133	129	180	73	2,000	600 00	......	2
Wolverine	Cheboygan	228	218	190	85	8,000	1,100 00	1	6
Woodland	Barry	74	49	180	79	3,000	....	1	2
Worth Tp. 1	Sanilac	55	53	180	66	1,200	....	1	......
Wyandotte	Wayne	2,514	1,636	187	95	150,000	90,545 00	3	33
Wyoming Tp. 7	Kent	540	413	200	57	20,000	19,680 58	1	6
Wyoming Tp. 9 fr	Kent	669	544	199	87	33,000	28,222 29	1	9
Yale	St. Clair	389	341	189	97	40,000	15,500 00	1	13
Ypsilanti	Washtenaw	1,602	983	195	95	70,000	....	3	32
Yuma	Wexford	80	54	178	86	5,000	335 00	1	1
Zeeland	Ottawa	772	637	200	82	25,000	10,500 00	1	20
Zeeland Tp. 4 fr	Ottawa	109	63	200	81	2,000	200 00	1	1
Zutphen	Ottawa	126	92	180	71	2,100	....	1	1

TABLE XVI.—*Concluded.*

Aggregate number of months taught by all teachers.		Total wages of teachers for the year.		Average monthly wages of teachers.		Amount paid for superintendence and instruction.	Total cost of schools.	Number of non-resident pupils.	Tuition of non-resident pupils.
Men.	Women.	Men.	Women.	Men.	Women.				
19	76	$1,152 00	$3,842 50	$60 63	$50 55	$4,994 50	$7,235 16	16	$166 75
9	63	1,100 00	2,947 50	122 22	46 78	4,047 50	5,805 47	30	476 25
....	9	....	450 00	....	50 00	450 00	523 30	....	....
10	10	700 00	425 00	70 00	42 50	1,125 00	1,557 76	3	13 00
20	100	1,800 00	5,000 00	90 00	50 00	6,800 00	9,314 09	71	1,221 50
10	10	770 00	620 00	77 00	62 00	1,390 00	1,793 86	1	5 00
......	18	....	990 00	......	55 00	990 00	1,419 16	2	....
9	58	800 00	2,960 00	88 88	51 03	3,760 00	4,811 02	7	86 20
9	18	612 50	825 00	68 05	45 83	1,437 50	1,802 72	33	397 95
9	....	630 00	....	70 00	....	630 00	662 73	......	....
30	325	4,000 00	19,311 68	133 33	59 40	23,311 68	41,468 10	31	787 50
10	59	1,010 00	2,990 00	101 00	50 68	4,000 00	6,779 48	......	....
10	129	1,400 00	7,010 00	140 00	54 34	8,410 00	23,642 97	61	1,451 12
10	112	1,200 00	5,316 50	120 00	43 89	6,516 50	10,652 59	78	1,361 25
30	320	4,750 04	19,265 00	125 00	53 95	24,015 04	34,319 18	58	839 94
9	9	540 00	405 00	60 00	45 00	945 00	1,219 95	2	....
10	189	1,200 00	9,040 00	120 00	47 83	10,240 00	14,235 18	35	564 00
10	10	600 00	400 00	60 00	40 00	1,000 00	1,427 23	3	....
9	9	558 00	378 00	62 00	42 00	936 00	1,180 07	1	....

TABLE XVII.

Census, enrollment, attendance, etc., of city and graded village schools as reported by superintendents for the school year 1911-1912.

Incorporated cities.	School population from township clerks' reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Totals for cities	355,836	33,479	85,259	142,971	20,977	282,686	26,311	58,638	89,833	12,243	187,025	25,359	55,908	84,879	11,205	177,351
Adrian	2,554	418	688	959	....	2,065	384	527	648	....	1,559	372	502	601	....	1,475
Albion	1,466	270	432	659	....	1,361	234	338	474	....	1,046	232	319	442	....	993
Allegan	904	232	227	300	....	759	185	196	261	....	642	172	184	247	....	603
Alma	853	171	315	614	77	1,177	147	183	314	35	679	141	179	296	29	645
Alpena	3,812	227	582	1,118	....	1,927	202	521	886	....	1,609	189	500	847	....	1,536
Ann Arbor	3,619	747	961	922	....	2,630	610	839	839	....	2,288	588	801	800	....	2,189
Au Gres	114	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Au Sable	86	....	25	30	....	55	....	22	26	....	48	....	20	22	....	42
Bad Axe	592	137	150	200	35	522	130	132	192	33	487	125	125	177	29	456
Battle Creek	6,188	793	1,408	2,787	....	4,988	662	1,236	2,381	....	4,279	643	1,177	2,258	....	4,078
Bay City	12,958	859	2,127	3,757	342	7,085	620	1,889	3,376	207	6,182	600	1,804	3,330	260	6,003
Beaverton	267	38	89	112	....	239	35	79	96	....	210	29	66	78	....	173
Belding	803	150	211	256	66	683	137	190	231	53	611	133	184	220	50	587
Benton Harbor	2,191	322	638	1,062	197	2,219	288	531	750	125	1,694	273	506	700	110	1,589
Bessemer	1,510	139	474	622	117	1,352	120	346	494	97	1,057	111	329	464	91	995
Big Rapids	1,099	166	234	528	....	928	147	284	450	....	881	142	175	384	....	701
Boyne City	1,600	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Brown City	230	62	41	78	52	233	62	41	78	52	233	49	33	61	30	173
Cadillac	2,523	268	666	1,013	281	2,228	230	456	809	177	1,672	218	433	758	165	1,574
Charlevoix	697	122	190	276	....	588	111	145	222	....	478	110	142	213	....	465
Charlotte	870	249	319	459	....	1,027	221	268	365	....	854	218	257	350	....	825
Cheboygan	2,300	193	493	751	....	1,437	160	345	563	....	1,068	155	318	514	....	987
Clare	450	129	145	130	....	404	110	125	108	....	343	106	119	88	....	313
Coldwater	1,317	255	380	454	88	1,177	238	342	368	53	1,001	231	308	348	48	935
Coleman	408	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Corunna	399	72	131	144	50	397	60	112	116	43	340	67	108	114	38	327
Croswell	448	84	95	154	61	394	78	74	139	38	329	75	72	130	34	311
Crystal Falls	1,770	137	620	1,007	275	2,039	120	328	601	150	1,199	115	315	577	141	1,148
Detroit	118,622	9,006	28,918	56,311	8,285	102,520	4,879	15,215	25,764	3,590	49,448	4,737	14,625	24,359	3,238	46,959
Dowagiac	1,231	185	419	661	268	1,533	168	339	452	147	1,106	165	328	433	105	1,031
East Jordan	971	109	210	300	142	761	89	161	200	110	560	84	151	181	104	520
East Lansing	168	44	39	68	....	151	42	37	65	....	144	41	34	61	....	136
East Tawas	460	58	141	177	34	410	50	134	136	26	346	49	132	134	25	340
Eaton Rapids	430	126	125	177	37	465	102	108	143	27	380	100	104	130	21	355
Escanaba	4,159	359	1,020	1,003	254	2,636	334	873	761	165	2,133	321	868	706	151	2,046
Flint	7,848	608	2,383	4,046	627	7,664	479	1,467	2,489	381	4,816	460	1,407	2,311	343	4,521
Fremont	567	129	166	358	....	653	120	146	246	....	512	115	138	234	....	487
Gladstone	1,418	120	396	569	120	1,205	102	367	472	67	1,008	98	341	459	59	957
Gladwin	317	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grand Haven	1,661	187	424	558	94	1,263	172	386	473	70	1,101	167	378	462	66	1,073
Grand Ledge	667	147	186	284	90	707	135	164	219	67	585	128	153	208	58	547
Grand Rapids	29,628	1,918	7,174	10,622	2,505	22,219	1,557	4,437	6,512	1,607	14,113	1,509	4,285	6,242	1,481	13,517
Greenville	931	186	281	458	....	925	153	207	314	....	674	146	199	288	....	633
Hancock	2,606	249	493	1,044	....	1,786	224	378	832	....	1,434	219	369	812	....	1,400
Harbor Beach	505	66	125	184	50	425	59	111	142	45	357	57	99	136	40	332
Harrison	199	37	34	48	38	157	33	33	46	37	149	32	26	36	26	120
Harrisville	196	33	31	47	52	163	33	31	47	52	163	26	27	42	40	135
Hastings	1,049	263	305	527	42	1,137	239	263	392	34	928	225	243	361	29	858
Hillsdale	1,438	....	....	....	....	....	262	285	501	....	1,048	248	279	473	....	1,000
Holland	3,258	255	1,021	1,360	384	3,020	208	698	916	243	2,065	203	680	882	236	2,001
Hudson	600	172	153	222	....	547	146	134	174	....	454	133	126	161	....	420
Ionia	1,222	170	302	436	92	1,000	151	246	383	76	856	149	238	370	68	825
Iron Mountain	3,267	287	897	1,525	....	2,709	274	842	1,317	....	2,433	263	803	1,250	....	2,316
Ironwood	4,059	322	821	1,161	491	2,795	307	728	1,125	365	2,525	297	686	1,065	338	2,386
Ishpeming	4,044	465	956	1,116	240	2,777	425	847	1,014	183	2,469	412	794	923	171	2,300
Jackson	7,194	563	1,608	3,525	....	5,696	509	1,224	2,415	....	4,148	492	1,176	2,269	....	3,937
Kalamazoo	9,552	943	3,415	4,814	1,036	10,208	742	1,809	2,301	457	5,309	721	1,708	2,150	403	4,982
Lansing	6,587	603	1,706	2,746	338	5,393	548	1,413	2,119	244	4,324	534	1,346	2,025	232	4,137
Lapeer	639	163	193	321	....	677	153	166	237	....	556	145	154	216	....	515
Ludington	2,813	179	562	834	264	1,839	165	473	711	207	1,556	158	460	689	193	1,500
Mackinac Island	210	42	36	73	....	151	42	36	73	....	151	35	27	48	....	110
Manistee	3,792	334	599	933	214	2,080	305	531	755	189	1,780	296	508	719	185	1,708
Manistique	1,505	170	295	413	158	1,036	155	247	344	106	852	151	238	327	96	812
Marine City	1,078	58	191	285	83	617	54	156	225	51	486	53	147	212	46	458
Marquette	3,337	320	591	909	161	1,981	260	479	745	130	1,614	247	456	701	124	1,528
Marshall	943	184	230	334	....	748	169	196	300	....	665	163	187	287	....	637
Mason	396	137	142	176	....	455	123	118	147	....	388	118	113	124	....	355
McBain	224	30	78	78	45	231	24	66	71	34	195	21	57	66	29	173
Menominee	3,527	301	796	1,134	275	2,506	279	664	956	220	2,119	273	643	916	199	2,031
Midland	759	165	269	506	....	940	145	193	332	....	670	133	181	312	....	626

**TABLE XVII.—*Continued.*

Incorporated villages.	School population from township clerks' reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Iron River	1,081	96	191	317	89	693	94	178	297	78	647	90	165	261	63	579
Ithaca	560	178	155	206	48	587	155	135	167	38	495	147	130	160	30	467
Jonesville	329	96	102	139	....	337	89	91	114	....	294	82	86	105	....	273
Kalkaska	323	72	109	118	46	345	62	82	86	28	258	58	75	81	24	238
Kent City	169	66	40	88	....	194	62	35	70	....	167	58	34	63	....	155
Kinde	182	38	61	67	....	166	34	57	59	....	150	22	47	41	....	110
Kingsley	171	27	65	82	....	174	25	56	71	....	152	23	50	60	....	133
Kingston	137	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Laingsburg	140	35	32	37	27	131	29	24	33	27	113	27	20	30	21	98
Lake Ann	89	37	....	45	....	82	25	....	35	....	60	19	....	21	....	40
Lake City	281	77	93	127	....	297	77	90	120	....	287	66	69	93	....	228
Lake Linden	1,849	125	169	336	....	630	109	154	301	....	564	105	148	291	....	544
Lake Odessa	342	105	123	157	....	385	94	90	127	....	311	90	80	115	....	285
Lakeview	276	111	78	103	28	320	101	68	84	18	271	96	62	72	14	244
L'Anse	642	31	148	252	73	504	29	117	197	56	399	25	105	180	46	356
††Laurium	7,663	858	2,153	2,569	523	6,103	779	2,141	2,543	513	5,976	702	1,914	2,285	431	5,332
Lawrence	194	....	....	....	....	....	64	63	67	....	194	62	62	65	....	189
Lawton	209	60	60	50	30	200	58	57	46	28	189	52	52	40	26	170
Leonard	130	20	38	40	....	98	20	38	40	....	98	16	25	29	....	70
LeRoy	165	39	33	73	....	145	36	31	53	....	120	30	27	35	....	92
Leslie	254	96	70	85	23	274	90	66	83	21	260	86	65	76	10	237
Lexington	144	24	45	69	....	138	20	37	52	....	109	18	35	49	....	102
*Lincoln	84	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Linden	158	56	23	82	....	161	52	23	68	....	143	50	22	64	....	136
Lisbon	88	30	....	28	....	58	27	....	26	....	53	24	....	23	....	47
Litchfield	169	50	37	42	50	179	46	36	36	37	155	43	33	34	34	144
Lowell	498	137	138	201	40	516	137	122	159	32	450	132	116	148	26	422
Luther	255	37	75	106	....	218	35	68	102	....	205	33	60	64	....	157
Lyons	157	33	79	49	....	161	31	78	48	....	157	30	76	47	....	153
Mackinaw City	197	24	43	30	71	168	18	40	25	63	146	16	39	22	56	133

Tawas City	392	44	99	116	....	259	42	91	106	......	239	32	83	86	...	201
Three Rivers	1,059	251	244	351	132	978	231	228	330	119	908	225	215	318	107	865
Traverse City	2 742	379	856	1,031	227	2,493	339	625	772	168	1,904	327	601	719	158	1,805
West Branch	509	121	148	182	56	507	92	135	167	46	440	89	130	158	42	419
Whittemore	137	......	55	69	......	124	......	40	49	....	89	....	40	41	......	81
Wyandotte	2,514	138	489	1,009	......	1,636	118	254	538	......	910	111	242	487	......	840
Yale	381	106	125	152	42	425	88	104	135	28	355	83	100	125	24	332
Ypsilanti	1,602	275	346	457	......	1,078	245	301	359	....	905	235	286	339	....	860
Zeeland	772	102	197	267	71	637	85	188	193	64	530	80	180	183	60	503

TABLE XVII.—*Continued.*

Incorporated cities.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Totals for cities..........	94	93	91	88	92	426.	781	102	1,998	31	2,364	....	438	584	5,581	....	389
Adrian..........	97	94	93	....	95	6	10	....	14	....	20	....	....	6	44	All	8
Albion..........	98	94	93	....	95	2.8	4	1	14	....	12	....	....	3	30	5-6	4
Allegan..........	92	93	94	....	93	2.8	6	....	4	....	10	....	....	3	20	4-5	2
Alma..........	96	98	94	85	92	2.3	4	....	5	....	9	....	1	3	19	12-17	2
Alpena..........	95	96	95	....	95	4	6	2	15	....	26	....	....	6	47	All	2
Ann Arbor..........	96	95	95	....	95	10	17	1	25	....	26	....	....	11	68	All	6
Au Gres..........	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Au Sable..........	....	95	90	....	93	....	....	1	....	1	....	....	....	2	....	....	....
Bad Axe..........	95	92	93	91	93	1.5	2	....	4	....	4	....	1	2	11	1-2	1
Battle Creek..........	97	95	94	....	95	9	16	6	34	....	68	....	....	15	118	All	10
Bay City..........	98	98	96	96	97	12	22	3	68	3	101	....	9	18	200	All	7
Beaverton..........	81	84	81	....	82	1	1	1	1	....	2	....	....	2	4	....	....
Belding..........	96	95	95	94	95	.5	6	1	6	....	7	....	2	2	21	5-7	2
Benton Harbor..........	94	95	93	88	94	2	8	1	15	....	19	....	3	3	45	All	4
Bessemer..........	92	95	94	94	94	2	5	....	13	....	15	....	4	2	37	All	3
Big Rapids..........	96	94	95	....	95	5	4	....	5	....	15	....	....	5	24	All	1
Boyne City..........	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Brown City..........	79	81	78	57	74	.7	3	....	1	....	2	....	1	1	7	3-10	....
Cadillac..........	95	85	95	90	92	3	5	1	17	....	24	....	5	4	51	All	7
Charlevoix..........	99	98	95	....	97	2.7	4	....	5	....	8	....	....	3	17	3-4	1
Charlotte..........	97	93	91	....	94	2.6	6	....	8	....	11	....	....	3	25	4-7	3
Cheboygan..........	97	91	90	....	91	4	4	1	9	....	17	....	....	5	30	All	2
Clare..........	95	92	89	....	92	.5	3	....	4	....	4	....	....	1	11	1-2	1
Coldwater..........	97	95	94	88	93	3.3	6	....	11	....	13	....	2	4	32	6-7	3
Coleman..........	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Corunna	97	95	95	91	94	.5	3	....	3	....	4	....	1	1	11	1-2	2
Croswell	95	89	90	68	85	1.7	2	....	2	....	3	....	1	2	8	1-8	....
Crystal Falls	96	96	96	94	96	3	2	1	10	1	17	....	2	5	31	All	9
Detroit	97	96	94	90	94	82	133	30	721	18	518	....	169	130	1,541	All	14
Dowagiac	98	96	93	72	93	3.7	4	1	9	....	13	....	3	5	29	6-7	2
East Jordan	95	93	95	91	92	1.4	4	....	5	....	6	....	3	2	18	9-13	1
East Lansing	98	92	88	....	92	.8	1	....	2	....	2	....	....	1	5	1-7	....
East Tawas	98	98	98	83	94	.7	2	....	3	....	4	....	1	1	10	3-10	....
Eaton Rapids	97	96	93	81	93	1.7	3	....	3	....	4	....	1	2	11	2-7	3
Escanaba	96	97	96	91	95	7	11	....	26	....	21	....	6	7	64	All	3
Flint	96	95	92	90	93	5	15	1	39	1	71	....	12	7	137	All	10
Fremont	96	95	93	....	95	1.4	3	1	3	....	6	....	....	3	12	5-7	1
Gladstone	96	95	95	86	94	.5	5	....	10	....	11	....	2	1	28	1-2	....
Gladwin	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grand Haven	98	98	98	95	98	2.3	6	....	10	....	11	....	3	3	30	6-7	1
Grand Ledge	95	93	95	88	94	1.1	7	....	5	....	3	....	1	2	16	7-8	2
Grand Rapids	96	96	95	92	95	28	54	6	150	2	213	....	53	36	470	All	34
Greenville	96	93	91	....	93	.2	8	....	7	....	8	....	....	1	23	3-4	2
Hancock	97	97	97	....	97	5	8	1	9	....	20	....	....	6	37	All	1
Harbor Beach	97	89	91	93	92	1.5	2	1	2	....	3	....	1	3	8	1-2	1
Harrison	90	84	75	80	82	.8	1	1	....	....	2	....	1	2	4	1-8	....
Harrisville	80	87	89	77	83	1	....	....	1	....	1	....	1	1	3	....	....
Hastings	94	92	92	86	92	3.1	5	2	5	....	9	....	1	6	20	6-7	5
Hillsdale	96	96	96	....	96	4.2	6	....	8	....	14	....	....	5	28	5-6	3
Holland	98	97	96	96	97	5	5	....	17	....	23	....	5	5	50	All	5
Hudson	97	94	94	....	95	4	2	....	5	....	6	....	....	4	13	....	2
Ionia	93	94	92	86	93	3.3	4	....	10	....	13	....	2	4	29	5-7	2
Iron Mountain	96	96	95	....	96	4	7	2	25	1	33	....	....	7	65	All	2
Ironwood	94	94	94	93	94	5	5	1	19	....	28	....	16	6	68	All	14
Ishpeming	96	94	92	94	94	9	9	....	22	....	28	....	10	9	69	All	9
Jackson	96	96	94	....	95	6	12	4	34	....	69	....	....	10	115	All	11
Kalamazoo	97	94	93	88	93	11	30	6	51	3	58	....	16	20	155	All	44
Lansing	97	96	95	95	96	10	13	....	40	....	54	....	7	10	114	All	6
Lapeer	93	92	90	....	92	2	5	....	4	....	6	....	....	2	15	....	1
Ludington	96	97	95	93	96	3	5	1	17	....	20	....	5	4	47	All	6
Mackinac Island	90	85	92	....	89	1.9	....	....	1	....	1	....	....	2	2	1-8	....
Manistee	97	95	95	95	95	5	9	1	17	....	31	....	6	6	63	All	6
Manistique	97	96	95	90	95	3	6	....	9	....	10	....	4	3	29	All	2
Marine City	98	93	94	93	94	1.4	2	....	5	....	6	....	2	2	15	3-5	1
Marquette	95	95	94	96	94	7	6	....	19	....	32	....	5	7	62	All	6
Marshall	96	95	94	....	95	3	6	....	6	....	11	....	....	3	23	All	4
Mason	96	94	95	....	96	1.5	3	....	4	....	4	....	....	2	11	1-2	1
McBain	89	91	92	86	90	.7	1	....	2	....	2	....	1	1	6	1-7	....
Menominee	97	96	95	90	95	6	9	....	19	....	27	....	10	6	65	All	3
Midland	91	94	93	....	93	.3	6	....	4	....	8	....	....	1	18	2-3	3

. TABLE XVII.—*Continued.*

Incorporated cities.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Monroe	95	92	90	88	91	2 2	5	1	7	....	9	....	3	4	24	4-5	3
Mt. Clemens	97	95	93	90	94	4	5	....	8	....	14	....	3	4	30	All	4
Mt. Pleasant	96	97	91	91	94	1 1	4	1	3	....	5	....	1	3	13	6-7	4
Muskegon	96	96	96	92	96	7	21	....	33	....	47	....	10	7	111	All	18
Muskegon Heights	96	95	92	92	94	5	2	....	3	....	6	....	1	1	12	1-2	1
Negaunee	95	94	93	91	94	5	5	....	11	....	20	....	3	5	39	All	4
Niles	95	95	90	....	94	3	6	....	10	....	13	....	....	3	29	All	2
North Muskegon	....	90	80	....	85	....	....	1	....	....	1	....	....	1	1	....	....
Norway	97	94	95	....	96	1.3	6	....	11	....	18	....	....	2	35	2-3	2
Omer	80	79	80	80	80	1	....	1	....	....	1	....	1	2	2	....	....
Onaway	96	78	94	97	96	1.5	2	....	5	....	10	....	1	2	18	1-2	....
Owosso	97	94	94	87	94	2.1	8	....	13	....	17	....	4	3	42	6-7	6
Petoskey	97	99	98	....	98	4	4	....	9	....	14	....	....	4	27	All	2
Pontiac	98	95	91	88	93	4	10	....	21	....	34	....	5	4	70	All	6
Port Huron	97	96	94	....	95	4	11	....	29	....	47	....	....	4	87	All	5
Rose City	90	75	72	....	79	1	....	....	2	....	3	....	....	1	5	....	....
Saginaw	96	96	95	....	95	13	31	5	44	....	55	....	....	18	130	All	3
Saginaw, W. S	97	96	95	....	96	5	12	2	28	....	38	....	....	7	78	All	6
St. Clair	96	95	92	95	94	.4	4	....	4	....	4	....	1	1	13	4-7	1
St. Ignace	91	92	86	....	90	1.5	1	1	3	1	5	....	....	4	9	1-2	....
St. Johns	97	96	93	91	94	4	5	1	5	....	6	....	3	5	19	All	3
St. Joseph	94	95	84	84	91	3	5	....	9	....	12	....	4	3	30	All	2
St. Louis	97	94	91	....	93	1.5	4	....	4	....	6	....	....	2	14	1-2	2
Sandusky	94	87	81	....	84	.9	1	....	2	....	3	....	....	1	6	1-10	....
Sault Ste. Marie	96	98	96	95	97	5	8	5	15	....	21	....	3	10	47	All	4
Scottville	95	95	93	92	94	1.6	1	....	2	....	3	....	1	2	7	1-3	....
South Haven	98	95	94	....	95	4	5	....	9	....	12	....	....	4	26	All	3
Standish	....	75	68	....	72	....	....	1	....	....	1	....	....	1	1	....	....
Stanton	99	93	91	90	92	.8	3	....	2	....	2	....	1	1	8	1-6	1
Sturgis	93	91	92	87	90	.4	5	1	5	....	11	....	1	2	22	4-7	1

Tawas City	95	95	93	....	94	.6	2	....	2	....	3	....	....	1	7	1-3	....
Three Rivers	97	97	96	94	95	.1	9	....	7	....	11	....	3	1	30	6-7	1
Traverse City	96	96	93	94	94	8	6	2	18	....	21	....	5	10	50	All	5
West Branch	93	96	91	89	91	1.5	2	....	4	....	4	....	1	2	11	1-2	....
Whittemore	....	99	90	....	95	....	....	1	....	....	1	....	....	1	1	....	....
Wyandotte	95	95	90	....	92	3	4	....	9	....	17	....	....	3	30	All	4
Yale	94	96	94	85	93	.5	3	....	4	....	4	....	1	1	12	1-2	....
Ypsilanti	95	95	94	....	95	2.1	6	....	10	....	12	....	....	3	28	6-7	4
Zeeland	95	96	95	95	95	1	3	....	6	....	6	....	3	1	18	....	1

**TABLE XVII.—*Continued.*

Incorporated villages.	School population from township clerks' reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Addison	140	75	44	44	26	189	63	42	36	24	165	62	39	33	23	157
*Ahmeek	1,816	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Akron	194	27	46	76	59	208	24	34	55	45	158	22	31	50	39	142
Alanson	194	16	67	97	....	180	14	60	85	....	159	12	53	68	....	133
Algonac	473	40	96	166	37	339	32	82	135	22	271	31	75	115	19	240
Almont	219	53	60	99	....	212	50	57	95	....	202	47	52	84	....	183
Applegate	83	....	25	29	....	54	....	32	24	....	56	....	25	22	....	47
Armada	192	58	76	84	....	218	53	68	74	....	195	48	60	62	....	170
Ashley	181	24	36	56	62	178	24	36	50	60	170	22	25	47	39	133
Athens	174	100	48	62	....	210	98	97	96	....	291	90	90	91	....	271
*Atlanta	176	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Augusta	139	55	42	77	....	174	54	36	55	....	145	51	35	55	....	141
Baldwin	148	27	30	37	34	128	19	21	31	32	103	18	17	28	23	86
Bancroft	124	22	30	33	32	117	28	35	38	39	140	26	33	34	36	129
Bangor	357	109	130	164	....	403	103	110	127	....	340	96	100	110	....	306
Baraga	1,265	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Baroda	208	33	39	36	44	152	29	35	30	31	125	25	30	28	30	113
Barryton	150	42	41	27	54	164	35	34	23	36	126	33	32	20	31	116
Bear Lake	154	67	48	68	....	183	55	39	49	....	143	50	32	40	....	122
Bellaire	319	65	83	168	15	331	54	70	160	12	296	48	65	151	10	274
Belleville	144	30	65	75	....	170	27	52	67	....	146	22	45	59	....	126
Bellevue	251	59	56	102	....	217	54	55	96	....	205	52	50	88	....	190
Benzonia	304	44	82	151	....	277	38	71	118	....	227	34	67	104	....	205
Berrien Springs	204	55	62	74	....	191	48	52	56	....	156	46	50	55	....	151
Birmingham	525	90	160	228	....	478	87	151	214	....	452	84	143	199	....	426
Blissfield, Tp. 1 fr.	150	....	82	34	....	116	....	82	34	....	116	....	63	24	....	87
Blissfield, Tp. 2 fr.	272	117	73	128	....	318	102	63	100	....	265	98	61	95	....	254
Bloomingdale	166	81	37	34	39	191	75	31	29	30	165	70	27	26	24	147
Boardman	165	23	41	56	41	161	21	38	51	30	140	18	34	47	28	127
Boyne Falls	152	22	46	65	....	133	24	34	49	....	107	21	30	41	....	92

Breckenridge	150	66	46	54	71	237	60	41	45	50	196	57	39	39	45	180
Breedsville	111	27	32	42	....	101	23	26	28	....	77	23	22	22	....	67
Brighton	182	65	55	75	....	195	63	54	61	....	178	61	49	57	....	167
Britton	99	35	27	36	....	98	25	27	36	....	88	23	27	34	....	84
Bronson	271	88	53	101	....	242	82	50	90	....	222	78	49	82	....	209
Brooklyn	146	58	53	52	....	163	62	52	46	....	160	53	48	43	....	144
Buchanan	422	72	139	203	....	414	64	124	141	....	329	62	119	133	....	314
Buckley	209	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Burlington	76	22	23	23	....	68	34	23	23	....	80	30	20	18	....	68
Burr Oak	165	81	39	67	16	203	81	39	67	16	203	75	29	52	14	170
Byron	115	31	27	24	35	117	30	25	24	35	114	28	23	20	34	105
Caledonia	139	46	24	33	32	135	40	24	30	25	119	34	22	28	21	105
Camden	109	51	26	21	32	130	51	26	17	32	126	44	23	15	28	110
Capac	222	63	41	110	....	214	55	36	95	....	186	50	32	84	....	166
Carleton	157	48	53	61	....	162	44	45	50	....	139	42	42	44	....	128
Caro	694	172	189	268	128	757	155	157	213	80	605	151	149	195	73	568
Carson City	239	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Carsonville	184	20	32	47	47	146	19	30	42	39	130	17	23	37	27	104
Caseville	180	46	44	57	....	147	46	44	57	....	147	35	33	50	....	118
Casnovia	116	25	80	28	7	140	22	58	20	5	105	19	53	18	4	94
Cass City	397	142	130	176	....	448	124	100	158	....	382	115	82	146	....	343
Cassopolis	285	81	86	118	....	285	79	80	102	....	261	72	74	90	....	236
Cedar Springs	261	72	77	117	29	295	65	66	98	22	251	60	63	88	19	230
Central Lake	253	57	70	95	20	242	54	66	90	15	225	52	63	86	12	213
Centreville	161	53	58	62	....	173	53	58	62	....	173	49	50	57	....	156
Chelsea	524	137	130	133	....	400	120	116	140	....	376	116	113	131	....	360
Chesaning	386	75	100	128	22	325	65	80	102	13	260	64	78	99	10	251
Clarkston	124	52	15	35	42	144	52	15	35	42	144	43	12	30	37	122
Clayton	88	35	37	34	....	106	33	29	24	....	86	20	28	21	....	78
*Clifford	89	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Climax	128	37	28	32	33	130	35	28	32	33	128	27	24	24	30	105
Clinton	190	78	78	47	....	203	78	78	47	....	203	73	72	46	....	191
Clio	242	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Coloma	192	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Colon	250	67	88	73	....	228	55	81	70	....	206	51	76	67	....	194
Columbiaville	77	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Concord	128	39	44	47	....	130	38	42	43	....	123	36	37	39	....	112
Constantine	260	84	76	122	....	282	75	71	114	....	260	73	64	108	....	245
Coopersville	257	86	90	123	....	299	77	79	100	....	256	73	74	83	....	230
Copemish	135	37	30	46	....	113	37	30	46	....	113	30	25	31	....	86
Custer	111	....	35	60	....	95	....	20	40	....	60	....	18	36	....	54
*Daggett	331	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Dansville	84	23	28	35	....	86	23	28	35	....	86	21	22	30	....	73
Davison	203	50	61	65	....	176	46	55	51	....	152	43	50	47	....	140
Dearborn	383	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

**TABLE XVII.—*Continued.*

Incorporated villages.	School population from township clerk's reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Decatur	408	86	123	188	......	397	81	110	176	......	367	79	98	144	......	321
Deckerville	239	64	50	51	80	245	64	50	51	80	245	51	35	40	50	176
Deerfield	189	53	42	91	......	186	48	36	74	......	158	45	31	65	......	141
Detour	304	35	40	39	53	167	30	40	39	53	162	29	39	35	46	149
Dexter	204	79	73	64	......	216	76	70	60	......	206	73	66	55	......	194
Dimondale	101	22	37	52	......	111	21	33	42	......	96	18	30	38	......	86
Douglas	140	30	55	36	......	121	30	51	30	......	111	27	46	24	......	97
Dryden	141	......	......	......	......	......	56	28	28	......	112	48	20	20	......	88
Dundee	297	61	85	105	44	295	56	69	87	27	239	52	65	83	24	224
Durand	613	81	158	335	62	636	70	150	276	50	546	65	142	267	43	517
*Eagle	80	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
East Grand Rapids	215	37	63	38	28	166	23	48	28	23	122	20	42	25	18	105
*East Lake	666	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Eau Claire	113	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Ecorse	315	9	85	134	74	302	9	80	123	61	273	8	75	112	47	242
Edmore	302	57	104	141	......	302	49	84	93	......	226	46	80	82	......	208
Edwardsburg	107	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Elberta	199	17	69	41	56	183	17	69	41	56	183	15	59	36	39	159
Elk Rapids	431	104	143	184	......	431	95	124	158	......	377	92	121	150	......	363
Elkton	260	49	48	148	......	245	43	46	119	......	208	39	41	111	......	191
Elsie	216	68	70	83	......	221	61	64	71	......	196	55	55	60	......	170
*Emmett	76	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Empire	193	46	33	76	50	205	44	30	73	43	190	39	28	68	38	173
Essexville	401	......	42	118	......	160	......	40	79	......	119	......	37	75	......	112
Evart	451	117	92	186	28	423	107	89	181	27	404	100	85	165	22	372
Fairgrove	134	27	37	39	36	139	27	37	39	36	139	19	25	30	26	100
Farmington	169	48	53	88	......	189	42	44	78	......	164	36	41	69	......	146
Farwell	221	26	83	101	......	210	25	59	70	......	154	23	53	63	......	139
Fennville	220	59	67	82	......	208	53	64	77	......	194	49	61	72	......	182
Fenton	519	150	226	273	......	649	141	151	189	......	481	138	144	179	......	461

Fife Lake	129	44	43	32		119	40	41	30		111	36	35	24		95
Flushing	294	94	91	140		325	84	82	122		288	81	78	111		270
Ford	589															
Forestville	104		34	56		90		34	56		90		28	50		78
Fowler	136															
Fowlerville	190	76	61	78	16	231	66	50	71	15	202	64	48	69	13	194
Frankenmuth	229															
Frankfort	601	88	173	255	45	561	68	145	190	40	443	65	137	176	37	415
Fraser	107															
Freeport	142	39	32	27	47	145	29	32	24	41	126	27	31	22	39	119
Fruitport	100						22	31	49		102	20	26	32		78
Gagetown	203	23	24	56		103	20	22	46		88	18	19	32		69
Gaines	101	25	56	31		112	22	51	28		101	20	46	26		92
Galesburg	188	48	53	104		205	39	50	85		174	36	44	81		161
Galien	140	38	47	43		128	34	47	41		122	32	42	27		101
Garden	422															
Gaylord	482	75	123	152	41	391	71	97	115	24	307	69	90	108	22	289
Gobleville	148	94	32	100		226	94	32	100		226	78	26	69		173
Grandville	317	45	120	90	10	265	43	110	88	19	260	36	100	80	18	234
Grant	179															
Grass Lake	190															
Grayling	622	78	166	277		521	63	144	226		433	60	139	215		414
Grosse Pointe	386															
Grosse Pointe Farms	261															
Grosse Pointe Park	118															
Grosse Pointe Shores	92		117	146		263		77	98		175		70	87		157
Hamtramck	2,073		145	625	120	890		134	432	43	609		125	381	37	543
Hanover	88	21	52	103		176	20	42	80		142	17	40	76		133
Harbor Springs	1,030	85	186	208	39	518	74	178	174	27	453	61	174	170	25	430
Harrietta	133	26	36	53	26	141	26	25	58	26	135	20	20	47	22	109
Hart	486	135	165	215	51	566	118	138	172	35	463	111	129	159	30	429
Hartford	336	86	140	134		360	80	135	130		345	76	113	107		296
Hersey	136															
Hesperia	165	35	41	45	57	178	30	32	33	39	134	28	31	29	35	123
Highland Park	1,911	125	632	1,213	212	2,182	77	334	564	86	1,061	73	320	524	72	989
Hillman	330															
*Hilltop	90															
Holly	378	91	114	136		341	84	103	106		293	81	99	101		281
Homer	228	69	60	130		259	66	50	120		236	63	45	103		211
Houghton	2,688															
Howard City	304	77	67	166		310	70	56	138		264	62	54	115		231
Howell	536	158	189	250		597	144	159	209		512	140	153	198		491
Hubbardston	117	28	26	26		80	23	24	23		70	21	23	19		63
†Hubbell																
Imlay City	298															

**TABLE XVII.—*Continued.*

Incorporated villages.	School population from township clerks' reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Iron River	1,081	96	191	317	89	693	94	178	297	78	647	90	165	261	63	579
Ithaca	560	178	155	206	48	587	155	135	167	38	495	147	130	160	30	467
Jonesville	329	96	102	139	....	337	89	91	114	....	294	82	86	105	....	273
Kalkaska	323	72	109	118	46	345	62	82	86	28	258	58	75	81	24	238
Kent City	169	66	40	88	....	194	62	35	70	....	167	58	34	63	....	155
Kinde	182	38	61	67	....	166	34	57	59	....	150	22	47	41	....	110
Kingsley	171	27	65	82	....	174	25	56	71	....	152	23	50	60	....	133
Kingston	137	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Laingsburg	140	35	32	37	27	131	29	24	33	27	113	27	20	30	21	98
Lake Ann	89	37	....	45	....	82	25	....	35	....	60	19	....	21	....	40
Lake City	281	77	93	127	....	297	77	90	120	....	287	66	69	93	....	228
Lake Linden	1,849	125	169	336	....	630	109	154	301	....	564	105	148	291	....	544
Lake Odessa	342	105	123	157	....	385	94	90	127	....	311	90	80	115	....	285
Lakeview	276	111	78	103	28	320	101	68	84	18	271	96	62	72	14	244
L'Anse	642	31	148	252	73	504	29	117	197	56	399	25	105	180	46	356
††Laurium	7,663	858	2,153	2,569	523	6,103	779	2,141	2,543	513	5,976	702	1,914	2,285	431	5,332
Lawrence	194	....	....	....	....	....	64	63	67	....	194	62	62	65	....	189
Lawton	209	60	60	50	30	200	58	57	46	28	189	52	52	40	26	170
Leonard	130	20	38	40	....	98	20	38	40	....	98	16	25	29	....	70
LeRoy	165	39	33	73	....	145	36	31	53	....	120	30	27	35	....	92
Leslie	254	96	70	85	23	274	90	66	83	21	260	86	65	76	10	237
Lexington	144	24	45	69	....	138	20	37	52	....	109	18	35	49	....	102
*Lincoln	84	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Linden	158	56	23	82	....	161	52	23	68	....	143	50	22	64	....	136
Lisbon	88	30	....	28	....	58	27	....	26	....	53	24	....	23	....	47
Litchfield	169	50	37	42	50	179	46	36	36	37	155	43	33	34	34	144
Lowell	498	137	138	201	40	516	137	122	159	32	450	132	116	148	26	422
Luther	255	37	75	106	....	218	35	68	102	....	205	33	60	64	....	157
Lyons	157	33	79	49	....	161	31	78	48	....	157	30	76	47	....	153
Mackinaw City	197	24	43	30	71	168	18	40	25	63	146	16	39	22	56	133

Mancelona	500	93	134	201	83	511	81	122	154	40	397	76	116	115	32	339
Manchester	291	86	84	81	....	251	77	87	85	....	249	74	83	82	....	239
Manton	304	72	114	113	18	317	65	105	102	14	286	63	100	96	12	271
Maple Rapids	141	42	27	87	....	156	40	25	38	....	103	38	22	34	....	94
Marcellus	207	60	93	100	....	253	53	81	83	....	217	51	77	77	....	205
Marion	271	54	79	105	....	238	55	78	108	....	241	51	72	92	....	215
*Marlborough	52	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Marlette	330	126	81	121	32	360	111	77	115	19	322	104	74	110	18	306
*Maybee	152	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mayville	181	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
McBride	128	29	38	40	....	107	24	31	32	....	87	20	25	27	....	72
Mecosta	122	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
*Melvin	98	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Memphis	187	60	24	80	30	194	55	20	60	25	160	48	17	57	23	145
Mendon	182	62	76	69	....	207	57	69	56	....	182	55	67	51	....	173
*Merrill	196	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mesick	183	....	....	....	....	....	82	35	65	....	182	70	25	52	....	147
Metamora	93	32	24	50	....	106	27	22	35	....	84	24	19	32	....	75
Middleville	196	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
*Mikado	71	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Milan	346	49	96	174	....	319	45	83	137	....	265	43	77	124	....	244
Milford	228	86	74	91	....	251	77	65	78	....	220	73	61	70	....	204
Millersburg	136	21	50	36	60	167	20	50	35	58	163	15	39	26	48	128
Millington	222	87	28	95	36	246	76	28	86	38	228	71	25	69	31	196
Minden City	175	33	41	66	....	140	33	41	66	....	140	24	34	44	....	102
Montague	204	34	64	93	....	191	32	53	77	....	162	30	52	75	....	157
Montgomery	125	49	32	35	30	146	46	30	25	29	130	40	27	21	25	113
Montrose	132	26	41	46	36	149	20	37	34	36	127	18	30	30	33	111
Morenci	337	92	114	130	....	336	81	103	110	....	294	72	101	96	....	269
Morley	135	45	35	47	....	127	32	35	47	....	114	35	26	38	....	99
Morrice	109	37	27	21	21	106	40	30	24	24	118	32	24	20	20	96
Mt. Morris	224	86	76	51	....	213	79	70	49	....	198	70	62	48	....	180
Muir	94	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Mulliken	114	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Munising	1,012	92	223	422	69	806	87	210	382	48	727	77	189	339	39	644
Nashville	325	78	79	145	....	302	73	77	129	....	279	64	72	118	....	254
Newaygo	431	76	116	154	40	386	65	100	131	34	330	62	90	122	31	305
New Baltimore	215	....	....	....	....	....	40	80	45	....	165	35	74	39	....	148
*Newberry	690	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
New Buffalo	167	15	46	68	....	129	14	41	57	....	112	13	37	49	....	99
New Haven	130	33	29	53	....	115	33	29	53	....	115	27	22	41	....	90
North Adams	112	64	33	32	....	129	57	30	31	....	118	50	27	29	....	106
North Branch	233	84	51	86	....	221	70	48	78	....	196	67	39	71	....	177
Northport	217	44	62	91	....	197	42	60	89	....	191	37	58	71	....	166
Northville	422	110	137	178	47	467	92	122	132	19	365	86	113	126	18	343

**TABLE XVII.—*Continued.*

Incorporated villages.	School population from township clerks' reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Oakley	70	....	32	28	....	60	....	29	25	....	54	....	24	20	....	44
*Oakwood	42	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Olivet	181	65	45	68	....	178	62	39	58	....	159	60	37	48	....	145
Onekama	145	52	35	50	....	137	50	33	48	....	131	47	27	37	....	111
*Onsted	131	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ontonagon	727	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Orion	209	49	60	79	....	188	44	60	79	....	183	39	51	67	....	157
Ortonville	131	33	54	59	....	146	26	50	56	....	132	23	42	44	....	109
Oscoda	369	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Otisville	147	14	42	86	....	142	16	40	80	....	136	15	37	74	....	126
Otsego	714	99	233	331	....	663	85	201	252	....	538	82	191	229	....	502
Otter Lake	115	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ovid	275	111	87	162	....	360	100	76	122	....	298	94	70	110	....	274
*Owendale	232	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Oxford	281	68	87	147	43	345	60	76	102	38	276	59	72	95	34	260
Parma	154	54	30	87	....	171	48	25	74	....	147	46	24	70	....	140
Paw Paw	430	140	88	168	33	429	132	75	157	35	399	127	72	149	30	378
*Peck	83	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pellston	334	45	100	151	52	348	40	80	120	40	280	36	69	85	29	219
Pentwater	320	49	103	113	39	304	38	84	89	30	241	38	76	86	23	223
*Perrinton	80	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Perry	221	36	73	77	....	186	33	70	72	....	175	30	62	63	....	155
Petersburg	222	53	33	79	39	204	48	32	70	32	182	46	30	67	28	171
Pewamo	107	26	13	29	29	97	24	13	27	28	92	21	12	25	26	84
Pierson	107	11	....	69	....	80	11	....	69	....	80	10	....	60	....	70
Pigeon	353	48	59	87	68	262	40	46	74	57	217	38	44	70	54	206
Pinckney	132	46	36	62	....	144	42	32	49	....	123	40	30	46	....	116
Pinconning	402	31	60	115	73	279	30	58	112	70	270	23	54	105	60	242
Plainwell	452	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Plymouth	482	103	179	156	62	500	94	139	143	31	407	91	134	138	27	390

Port Austin	251	26	66	121	......	213	19	57	103	......	179	18	50	74	......	142
Port Hope	121	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Portland	428	110	119	256	......	485	90	90	132	......	312	85	80	125	......	290
Port Sanilac	105	25	33	45	......	103	23	31	45	......	99	20	25	35	......	80
*Posen	221	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Potterville	142	75	40	29	......	144	75	40	29	......	144	70	36	27	......	133
Quincy	249	112	34	70	45	261	135	15	80	45	275	132	14	78	43	267
Reading	256	109	82	92	......	283	99	71	79	......	249	95	68	78	......	241
*Redford	106	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Red Jacket	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Reed City	523	78	134	164	41	417	72	124	135	32	363	71	122	131	30	354
Reese	191	25	60	72	......	157	18	50	62	......	130	17	48	46	......	111
Richland	84	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Richmond	386	35	90	172	......	297	31	82	166	......	279	29	79	159	......	267
River Rouge	1,379	61	341	634	129	1,165	57	276	548	83	964	48	251	509	75	883
Rochester	413	66	104	147	51	368	63	91	125	43	322	58	81	112	32	283
Rockford	285	96	92	129	......	317	85	81	113	......	279	80	71	104	......	255
Rogers	378	16	100	185	......	301	15	93	173	......	281	14	89	162	......	265
Romeo	404	92	114	160	31	397	90	111	132	28	361	88	93	124	21	326
Roscommon	107	18	28	46	20	112	18	28	46	20	112	15	26	40	17	98
Royal Oak	506	52	116	270	......	438	53	101	225	......	379	49	94	201	......	344
St. Charles	573	70	162	233	83	548	54	133	185	38	410	51	126	174	37	338
St. Clair Heights	600	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Saline	203	71	59	84	......	214	67	50	69	......	186	64	48	65	......	177
Sand Lake	133	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Saranac	244	76	88	91	......	255	67	76	76	......	219	63	73	71	......	207
Saugatuck	180	41	18	45	34	138	39	22	36	30	127	37	20	35	29	121
Schoolcraft	180	51	68	66	......	185	45	60	61	......	166	43	56	55	......	154
Sebewaing	535	48	114	198	......	360	42	82	140	......	264	39	74	140	......	253
Shelby	364	97	114	158	......	369	90	99	118	......	307	87	93	116	......	296
Shepherd	250	63	63	87	30	243	54	56	69	24	203	51	52	65	21	189
Sheridan	155	44	52	74	......	170	41	44	64	......	149	38	40	59	......	137
Sherman	139	19	25	27	23	94	19	24	27	29	99	18	23	26	28	95
Sherwood	120	29	16	40	33	118	29	14	33	30	106	26	13	29	28	96
*Sibley	207	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
South Lyon	156	55	40	69	......	164	48	38	63	......	149	45	36	60	......	141
*South Range	2,511	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Sparta	429	126	137	164	47	474	112	115	142	35	404	105	103	133	30	371
Spring Lake	232	15	56	108	......	179	11	49	81	......	141	11	47	77	......	135
Springport	136	43	58	40	17	158	40	47	35	9	131	35	46	33	8	122
Stambaugh	110	59	244	469	143	915	58	224	439	131	852	57	200	371	82	710
Stanwood	127	42	28	38	......	108	33	23	25	......	81	30	22	24	......	76
Stephenson	1,037	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Stevensville	224	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Stockbridge	164	91	42	49	27	209	90	41	46	26	203	87	38	41	25	191

**TABLE XVII.—*Continued.*

Incorporated villages.	School population from township clerks' reports.	Enrollment.					Average number belonging.					Average daily attendance.				
		High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.
Sunfield	112	52	48	41		141	44	38	30		112	42	37	28		107
Sutton's Bay	202	23	14	22	40	99	19	13	21	40	93	17	12	20	34	83
Tecumseh	511	144	133	252		529	128	129	189		446	123	125	178		426
Tekonsha	180	60	53	41	30	184	53	50	43	48	194	52	47	41	47	187
Thompsonville	293															
Three Oaks	413	59	116	159		334	57	104	132		293	55	98	127		280
*Tower	332															
Trenton	439	34	148	252	59	493	29	96	183	33	341	28	90	162	28	308
Tustin	118	43	24	26	35	128	42	23	25	33	123	40	21	23	28	112
Twining	173	65	35	52		152	59	27	36		122	55	25	34		114
Ubly	177	28	65	75		168	28	65	75		168	20	46	43		109
Union City	334	103	96	113		312	90	88	108		286	87	84	103		274
Unionville	212	53	93	35		181	50	80	30		160	45	77	28		150
Utica	221	48	42	73		163	43	33	60		136	41	30	52		123
Vandalia	119	50	37	39		126	44	32	32		108	41	30	28		99
Vanderbilt	176	22	106	51		179	20	88	38		146	19	86	33		138
Vassar	472	81	97	237	51	466	72	70	166	25	333	68	64	153	20	305
Vermontville	165	68	61	72		201	61	54	54		169	58	53	52		163
Vernon	107	6	26	38	38	108	6	24	36	30	96	5	22	34	27	88
Vicksburg	351	87	105	145	23	360	79	88	119	15	301	77	85	114	14	290
Wakefield	863	57	247	376	103	783	45	188	336	56	625	42	180	330	50	602
Waldron	121	71	24	38	44	177	71	20	34	31	156	69	19	31	27	146
*Walkerville	121															
Warren	85		24	38		62		24	38		62		20	30		50
Watervliet	309	59	101	105	53	318	54	90	94	33	271	52	86	88	31	257

Wayland	164	58	46	44	57	205	51	40	38	45	174	44	35	32	33	144
Wayne	442	105	128	209	....	412	91	116	170	....	377	88	109	155	....	352
Webberville	142	32	13	42	26	113	32	13	42	26	113	29	12	39	24	104
*Westphalia	222	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
White Cloud	243	58	70	76	20	224	48	64	67	12	191	44	59	63	11	177
Whitehall	448	64	113	162	....	339	61	103	131	....	295	59	101	130	....	290
White Pigeon	184	50	47	58	13	168	45	46	56	10	157	43	44	54	9	150
Williamston	309	97	79	140	....	316	93	70	123	....	286	83	67	115	....	265
Wolverine	228	47	89	46	36	218	38	72	39	31	180	36	70	37	28	171
Woodland	74	42	24	27	....	93	42	24	27	....	93	36	20	23	....	79

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*Not legally graded.
†Included in Lake Linden.
††Includes Calumet and Red Jacket.

**TABLE XVII.—*Continued.*

Incorporated villages.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Addison	96	93	91	92	93	1.7	1	......	1	......	1	......	1	2	4	1-4	......
*Ahmeek	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Akron	91	92	90	86	89	1	......	......	1	......	1	......	1	1	3	......	......
Alanson	86	88	82		85	1	......	......	2	......	2	......	......	1	4	......	......
Algonac	99	89	89	90	92	.8	1	......	3	......	4	......	1	1	9	1-6	1
Almont	94	91	90	......	92	.7	2	1	1	......	2	......	......	2	5	1-4	1
Applegate	......	85	95	......	90	......	......	1	......	1	......	......	......	2	......	......	......
Armada	90	88	83	......	87	1.7	2	......	1	......	2	......	......	2	5	1-4	......
Ashley	91	69	90	60	77	......	2	......	1	......	1	......	1	......	5	......	......
Athens	97	98	98	......	98	1	2	1	3	......	1	......	......	2	6	......	......
*Atlanta	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Augusta	93	95	89	......	93	8	3	......	1	......	1	......	......	1	5	1-4	1
Baldwin	90	88	90	74	85	1	......	......	1	......	1	......	1	1	3	......	......
Bancroft	98	97	96	96	97	1	1	......	1	......	1	......	1	1	4	......	......
Bangor	93	91	86	......	90	1.8	2	1	2	......	4	......	......	3	8	1-4	......
Baraga	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Baroda	92	91	96	98	94	1	1	......	1	......	1	......	1	1	4	......	......
Barryton	93	88	87	87	89	1	......	......	1	......	1	......	1	1	3	......	......
Bear Lake	82	81	80	......	80	1	1	......	2	......	1	......	......	1	4	......	......
Bellaire	82	85	88	80	85	1 6	2	......	2	......	3	......	1	2	8	1-3	......
Belleville	95	90	90	......	93	1 7	1	......	1	......	2	......	......	1	4	1-4	......
Bellevue	98	92	89	......	93	1.6	2	......	2	......	2	......	......	2	6	3-7	1
Benzonia	90	93	88	......	90	.7	1	......	2	......	3	......	......	1	6	1-4	......
Berrien Springs	96	96	98	......	97	7	2	......	2	......	2	......	......	1	6	1-4	1
Birmingham	96	93	90	......	93	1.5	3	......	4	......	5	......	......	2	12	1-2	1
Blissfield, No. 1 fr		85	90	......	87	......	......	1	2	......	1	......	......	1	3	......	......
Blissfield, No. 2 fr	96	96	95	......	95	.7	3	......	2	......	3	......	......	1	8	2-7	1
Bloomingdale	95	89	88	79	88	1	2	......	1	......	1	......	1	1	5	......	......
Boardman	88	87	92	93	90	1	......	......	1	......	1	......	1	1	3	......	......
Boyne Falls	92	93	83	......	89	1	......	......	1	......	1	......	......	1	2	......	......

Breckenridge	95	95	94	90	93	1	1		1		1		1	1	4		1
Breedsville	99	84	78		87		1		1		1			1	3		
Brighton	96	94	92		94	.5	2		2		2			1	6	1-2	
Britton	92	99	93		94	1	1		1		1			1	3		
Bronson	96	98	95		96	.6	3		2		3			1	8	1-3	
Brooklyn	93	94	89		89	1	2		1		2			1	5		
Buchanan	97	96	94		96	1.5	2		4		4			2	10	1-2	1
Buckley																	
Burlington	91	96	88		90	1		1			1			2	1		
Burr Oak	91	95	89	92	92	1.7	1		2		2		1	2	6	1-4	
Byron	96	96	95	98	96	.8			1		1		1	1	3	1-6	
Caledonia	85	96	96	95	93	1	1	1			1		1	2	3		
Camden	94	90	86	90	92	1	2		1		1		1	1	5		
Capac	92	90	88		90	.7	1		1		2			1	4	1-8	
Carleton	96	93	88		92	1			1		2			1	3		
Caro	98	95	91	90	93	2.4	4		4		6		1	3	15	4-7	2
Carson City																	
Carsonville	85	72	80	57	73	1			1		1		1	1	3		
Caseville	85	80	90		83	.8	1	1			1			2	2	1-6	
Casnovia	90	91	90	80	88	.8		2		1			1	4	1	1-5	
Cass City	92	82	92		89	1.3	3		4		3			2	10	2-3	
Cassopolis	91	92	88		90	7	3		2		3			1	8	1-4	
Cedar Springs	92	95	89	90	92	.8	2		2		2		1	1	7	1-5	1
Central Lake	96	95	95	80	91	6	2		3		2		1	1	8	1-3	1
Centreville	92	88	84		88	.7	3	1	1		2			2	6	1-4	1
Chelsea	96	97	94		95	5	5		4		4			1	13	1-2	1
Chesaning	97	97	97	77	96	1.6	2		2		2		1	2	7	3-7	1
Clarkston	90	82	94	93	90	7	1		1		1		1	1	4	1-4	
Clayton	87	95	85		89	1			2		1			1	3		
*Clifford																	
Climax	90	86	82	91	87	1	1		1		1		1	1	4		
Clinton	96	96	97		96	.6	3		3		1			1	7	1-3	
Clio																	
Coloma																	
Colon	92	93	96		93	1.7	1		2		2			2	5	1-8	1
Columbiaville																	
Concord	96	96	94		95	1	1		1		2			1	4		1
Constantine	94	89	94		92	.8	2		2		3			1	7	1-7	1
Coopersville	94	93	80		89	.9	3	1	1		3			2	7	1-10	
Copemish	90	91	70		83	.9			1		1			1	2	1-10	
Custer		90	90		90			1			1			1	1		
*Daggett																	
Danville	91	78	85		84	1.6			1		1			2	2	1-3	
Davison	93	92	93		93	.8	2		1		1			1	4	1-7	
Dearborn																	

**TABLE XVII.—*Continued.*

Incorporated villages.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Decatur	97	96	93		95	.7	3		4		5			1	12	2-7	
Deckerville	73	70	74	61	70	.7	1		1		1		1	1	4	1-4	
Deerfield	94	86	87		89	.9	1		1		2			1	4	1-10	
De Tour	96	91	89	84	90	1			1		1		2	1	4		
Dexter	96	94	92		94	.6	3		3		2			1	8	3-7	
Dimondale	82	95	90		89	1			1		2			1	3		
Douglas	93	88	89		90	1	1		2		1			1	4		
Dryden	85	80	80		80	1	1		1		1			1	3		
Dundee	92	93	92	88	91	.9	2		2		2		1	1	7	1-10	
Durand	93	94	97	86	92	1.2	2		4		5		1	2	12	3-4	1
*Eagle																	
East Grand Rapids	91	87	88	78	86		1		1		1		1		4		1
*East Lake																	
Eau Claire																	
Ecorse	88	93	91	77	88	.7			2		3		1	1	6	1-4	1
Edmore	94	95	88		90	.9	1		2		2			1	5	1-10	
Edwardsburg																	
Elberta	87	90	86	76	85	.5	1		2		1		1	1	5	1-2	1
Elk Rapids	95	96	96		96	1.5	2		4		7			2	13	1-2	1
Elkton	93	91	85		90	1.9			2		3			2	5	1-10	
Elsie	90	87	84		86	1.7	1		2		2			2	5	1-4	
*Emmett																	
Empire	89	93	93	89	91	.7	1		1		2		1	1	5	1-4	
Essexville		91	89		90			1	1		2			1	3		1
Evart	92	97	89	81	90	.6	4		2		4		1	1	11	1-3	
Fairgrove	83	89	88	92	88	1	1		1		1		1	1	4		
Farmington	90	90	88		88		2		1		2				5		
Farwell	95	89	89		91	1	1	1	1		2			2	4		
Fennville	93	96	93		94	1	1		2		2			1	5		
Fenton	97	95	94		95	1.6	3		4		6			2	13	1-3	2

Fife Lake	93	86	83	....	87	1	....	1	....	....	1	....	....	2	1	....	....
Flushing	96	94	91	....	94	1.7	1	....	2	....	2	....	....	2	5	3-10	1
Ford	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Forestville	....	90	89	....	89	....	....	1	....	....	1	....	....	1	1	....	....
Fowler	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Fowlerville	96	97	98	90	95	1.7	2	....	2	....	2	....	1	2	7	1-3	1
Frankenmuth	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Frankfort	96	94	92	83	91	1.5	2	....	4	1	5	....	1	3	12	1-2	1
Fraser	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Freeport	91	96	95	86	92	1	1	1	....	....	1	....	1	2	3	....	....
Fruitport	99	95	88	....	92	1	....	....	1	....	1	....	....	1	2	....	....
Gagetown	84	84	79	....	82	1	1	....	1	....	1	....	....	1	3	....	....
Gaines	94	86	90	....	90	1	....	....	2	....	1	....	....	1	3	....	....
Galesburg	95	95	92	....	93	.8	2	....	3	....	2	....	....	1	7	1-6	1
Galien	95	91	75	....	83	.8	1	....	1	....	1	....	....	1	3	1-6	....
Garden	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Gaylord	96	93	94	88	93	1	3	1	3	....	4	....	1	2	11	....	....
Gobleville	81	91	69	....	80	1	2	....	1	....	2	....	....	1	5	....	....
Grandville	88	90	85	90	89	.7	2	....	3	....	3	....	1	1	9	1-4	....
Grant	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grass Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grayling	95	96	95	....	95	.5	3	....	5	....	4	....	....	1	12	1-2	1
Grosse Pointe	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grosse Pointe Farms	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grosse Pointe Park	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Grosse Pointe Shores	....	91	89	....	90	....	....	1	2	....	3	....	....	1	5	....	....
Hamtramck	....	93	89	88	90	....	....	1	5	....	8	....	1	1	14	....	1
Hanover	83	85	85	....	84	1	....	....	2	....	2	....	....	1	4	....	....
Harbor Springs	96	94	95	91	94	1.5	3	....	4	....	4	....	1	2	12	1-2	2
Harrietta	90	90	92	88	90	1	....	....	1	....	1	....	1	1	3	....	....
Hart	94	93	92	87	93	1.3	4	....	4	....	4	....	1	2	13	2-3	....
Hartford	95	93	89	....	92	1.7	1	....	3	....	3	....	....	2	7	1-4	1
Hersey	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Hesperia	95	96	87	89	91	.9	1	....	1	....	1	....	1	1	4	1-10	....
Highland Park	95	95	92	83	91	1.5	5	1	10	....	15	....	3	3	33	1-2	4
Hillman	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
*Hilltop	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Holly	96	96	94	....	95	.7	2	....	3	....	3	....	....	1	8	1-8	1
Homer	90	85	80	....	85	.6	3	....	3	....	2	....	....	1	8	1-3	1
Houghton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Howard City	89	93	82	....	88	.5	2	....	2	....	3	....	....	1	7	1-2	1
Howell	97	96	94	....	95	1.5	4	....	5	....	7	....	....	2	16	1-2	1
Hubbardston	92	95	83	....	90	1	1	....	1	....	1	....	....	1	3	....	....
†Hubbell	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Imlay City	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

**TABLE XVII.—*Continued.*

Incorporated villages.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Iron River	93	92	87	80	88	2.2	3	......	5	......	7	......	2	3	17	6 7	2
Ithaca	96	95	92	89	93	3.6	2	......	4	......	4	......	1	4	11	3-7	2
Jonesville	92	91	92	......	92	.6	3	......	2	......	3	......	......	1	8	3-7	1
Kalkaska	93	85	90	85	88	1.6	2	......	3	......	3	......	1	2	9	1-3	1
Kent City	94	97	90	......	92	.7	1	......	1	......	1	......	......	1	3	1-4	......
Kinde	74	86	83	......	81	1	......	......	1	......	1	......	......	1	2	......	......
Kingsley	91	88	85	......	88	1	......	......	2	......	2	......	......	1	4	......	......
Kingston	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Laingsburg	94	91	93	89	91	.9	1	1	......	......	1	......	1	2	3	1-10	......
Lake Ann	85	......	75	......	80	1	......	......	......	......	1	......	......	1	1	......	......
Lake City	85	82	82	......	83	.8	2	......	3	......	2	......	......	1	7	1-6	1
Lake Linden	97	96	94	......	96	2	5	......	7	......	12	......	......	3	24	All	3
Lake Odessa	95	90	91	......	91	1.6	2	......	4	......	3	......	......	2	9	3-7	1
Lakeview	95	92	85	75	87	1.8	2	......	2	......	2	......	1	2	7	1-7	......
L'Anse	94	91	88	88	90	1.3	2	1	4	......	5	......	2	3	13	2-3	......
‡Laurium	96	95	95	91	95	16	25	3	69	......	70	......	31	20	195	All	3
Lawrence	95	94	90	......	92	.6	2	......	2	......	2	......	......	1	6	3-7	1
Lawton	90	91	89	91	90	1.4	1	......	2	......	2	......	1	2	6	3-5	......
Leonard	82	66	73	......	74	1	......	......	1	......	1	......	......	1	2	......	......
Le Roy	85	82	66	......	71	.8	1	......	1	......	2	......	......	1	4	1-5	......
Leslie	94	98	91	50	83	.8	3	......	2	......	2	......	1	1	8	1-5	1
Lexington	95	93	94	......	94	.7	1	......	1	......	2	......	......	1	4	1-8	......
*Lincoln	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......	......
Linden	90	96	93	......	94	.7	2	......	1	......	2	......	......	1	5	1-8	......
Lisbon	87	......	88	......	87	......	1	......	......	......	1	......	......	......	2	......	......
Litchfield	93	90	91	90	90	1	2	......	1	......	1	......	1	1	5	......	......
Lowell	96	94	92	85	92	1.5	3	......	4	......	5	......	1	2	13	1-2	1
Luther	90	93	65	......	82	.9	......	......	2	......	2	......	......	1	4	1-10	1
Lyons	98	97	96	......	97	1	1	......	2	......	1	......	......	1	4	......	......
Mackinaw City	75	98	84	88	87	1	......	......	1	......	1	......	1	1	3	......	......

Mancelona	87	94	93	83	89	.6	3	1	3		5		2	2	13	3-7	1
Manchester	95	97	96	96		1.6	2		3		3			2	8	3-7	
Manton	95	95	90	77	89	.7	2		2		3		1	1	8	1-4	1
Maple Rapids	97	97	90		94	.8	1		1		2			1	4	1-6	
Marcellus	97	95	92		95	.8	2		2		2			1	6	1-6	1
Marion	94	91	88		90	.8	1	1	1		2			2	4	1-6	
*Marlborough																	
Marlette	93	98	96	94	95	1.8	2		2		3		1	2	8	1-7	
*Maybee																	
Mayville																	
McBride	86	78	80		81	1			1		1			1	2		
Mecosta																	
*Melvin																	
Memphis	92	84	90	92	90	1	1		1		2		1	1	5		
Mendon	96	95	91		94	.5	2		2		2			1	6	1-2	1
*Merrill																	
Mesick	88	80	85		85	1			1		2			1	3		
Metamora	90	86	92		89	.9	1		1		1			1	3	1-10	
Middleville																	
*Mikado																	
Milan	95	94	91		93	.8	2		3		3			1	8	1-5	
Milford	94	94	90		93	.7	2		2		3			1	7	1-8	
Millersburg	86	84	84	84	84	1			1		1		1	1	3		
Millington	80	95	85	85	86	.6	2		1		2		1	1	6	1-3	
Minden City	72	87	66		75	1			1		1			1	2		
Montague	95	99	98		96	.7	1		2		2			1	5	1-4	1
Montgomery	87	89	83	84	86	2	1		1		1		1	2	4		
Montrose	85	81	86	90	85	1			1		1		1	1	3		
Morenci	88	98	87		91	1.6	2		3		3			2	8	3-7	1
Morley	85	84	86		85	1			1		1			1	2		
Morrice	89	85	80	80	85	.7	1		1		1		1	1	4	1-8	
Mt. Morris	81	81	94		88	.9	1	2		1				4	1		
Muir																	
Mulliken																	
Munising	89	90	88	80	87	1.3	3	1	6		10		1	3	20	2-3	1
Nashville	94	96	95		95	1.6	2		2		4			2	8	3-7	1
Newaygo	94	93	91	90	92	.9	2	1	2		4		1	2	9	1-10	
New Baltimore	92	95	90		93	.6	2		4		1			1	7	1-3	1
*Newberry																	
New Buffalo	90	90	88		88	1	1	1			1			2	2		
New Haven	90	90	90		90	.9			1		1			1	2	1-10	
North Adams	89	94	96		93	1.6	2		1		1			2	4	3-8	
North Branch	90	82	89		89	1	2		2		2			1	6		
Northport	88	86	84		85	1	1		2		2			1	5		
Northville	93	93	95	92	94	1.5	2		4		5		1	2	12	1-2	1

**TABLE XVII.—*Continued.*

Incorporated villages.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Oakley	....	92	90	....	91	....	....	1	....	....	1	....	....	1	1	....	....
*Oakwood	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Olivet	97	95	86	....	93	.8	2	....	2	....	2	....	....	1	6	1–7	....
Onekama	94	82	75	....	84	1	1	....	1	....	1	....	....	1	3	....	....
*Onsted	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ontonagon	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Orion	93	91	84	....	89	1.8	1	....	2	....	2	....	....	2	5	1–5	....
Ortonville	88	90	91	....	89	1	1	....	1	....	1	....	....	1	3	....	....
Oscoda	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Otisville	95	94	95	....	95	1	1	....	1	....	2	....	....	1	4	....	....
Otsego	96	94	91	....	93	2.5	3	....	8	....	10	....	....	3	21	1–2	2
Otter Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ovid	95	93	95	....	94	.8	4	....	2	....	4	....	....	1	10	1–5	1
*Owendale	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Oxford	97	94	92	90	93	1.7	1	....	2	....	3	....	1	2	7	2–7	1
Parma	98	97	90	....	94	.8	1	....	1	....	2	....	....	1	4	1–7	....
Paw Paw	95	96	96	75	88	1.6	3	....	4	....	3	....	1	2	11	4–10	2
*Peck	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pellston	90	86	71	75	80	.7	2	....	2	....	3	....	1	1	8	1–4	....
Pentwater	96	95	92	85	92	.5	2	....	2	....	3	....	1	1	8	1–2	1
*Perrinton	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Perry	91	92	92	....	92	1	1	1	1	....	2	....	....	2	4	....	....
Petersburg	95	94	87	71	87	1	1	....	1	....	2	....	1	1	5	....	....
Pewamo	90	93	90	93	90	1	....	1	....	....	1	....	1	2	2	....	....
Pierson	90	....	85	....	85	1	....	....	....	....	1	....	....	1	1	....	....
Pigeon	95	95	87	84	90	.8	1	....	2	....	2	....	1	1	6	1–6	....
Pinckney	94	95	95	....	95	1	1	....	1	1	1	....	....	2	3	....	....
Pinconning	71	93	94	70	86	.7	1	....	2	....	2	....	1	1	6	1-4	....
Plainwell	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Plymouth	97	94	96	83	92	1.5	3	....	4	....	4	....	1	2	12	1–2	3

Port Austin	93	89	81	....	88	.7	1	....	2	....	2	....	....	1	5	1-4	....
Port Hope	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Portland	97	90	92	....	94	1	4	....	4	....	4	....	....	1	12	....	....
Port Sanilac	90	90	87	....	89	....	1	....	1	....	1	....	....	....	3	....	....
*Posen	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Potterville	92	90	91	....	91	1	1	....	1	....	2	....	....	1	4	....	....
Quincy	95	93	95	92	94	2	3	....	1	....	2	....	1	2	7	....	....
Reading	94	96	95	....	95	1.7	2	....	2	....	2	....	....	2	6	1-4	....
*Redford	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Red Jacket	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Reed City	98	98	97	94	96	1.6	2	....	4	....	4	....	1	2	11	1-3	1
Reese	96	90	74	....	87	1	1	....	1	....	1	....	....	1	3	....	....
Richland	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Richmond	96	91	96	....	94	.6	3	....	3	....	4	....	....	1	10	1-3	1
River Rouge	90	81	80	80	82	1.2	4	....	8	2	14	....	3	4	29	3-4	2
Rochester	94	92	93	87	92	.8	2	....	2	....	3	....	1	1	8	1-5	....
Rockford	94	87	92	....	91	1	2	....	2	....	2	....	....	1	6	....	1
Rogers	94	85	79	....	86	.8	....	1	1	....	4	....	....	2	5	1-6	....
Romeo	97	81	80	69	82	.5	3	....	2	....	4	....	1	1	10	1-2	1
Roscommon	80	90	87	80	85	1	1	....	1	....	1	....	1	1	4	....	....
Royal Oak	95	93	88	....	92	1.2	1	....	3	....	6	....	....	2	10	3-4	1
St. Charles	93	95	92	95	94	.5	2	....	4	....	4	....	1	1	11	1-2	1
St. Clair Heights	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Saline	95	96	94	....	95	.8	2	....	2	....	2	....	....	1	6	1-5	1
Sand Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Saranac	93	96	93	....	94	.7	2	....	2	....	3	....	....	1	7	2-7	....
Saugatuck	96	91	98	98	96	1.6	....	....	1	....	1	....	1	2	3	1-3	....
Schoolcraft	98	97	93	....	96	.7	2	1	1	....	2	....	....	2	5	2-7	1
Sebewaing	96	92	91	....	93	.8	2	....	2	....	4	....	....	1	8	1-6	1
Shelby	96	96	94	....	95	.6	3	....	4	....	4	....	....	1	11	1-3	1
Shepherd	94	94	93	85	92	.7	2	....	2	....	2	....	1	1	7	1-4	1
Sheridan	94	90	91	....	91	1	1	....	2	....	1	....	....	1	4	....	....
Sherman	95	96	96	96	96	1	....	....	1	....	1	....	1	1	3	....	....
Sherwood	90	95	87	93	91	1	....	1	....	....	1	....	1	2	2	....	....
*Sibley	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
South Lyon	95	94	95	....	95	1	1	....	1	....	2	....	....	1	4	....	....
*South Range	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Sparta	96	95	94	91	94	.5	3	....	3	....	4	....	1	1	11	1-2	1
Spring Lake	99	95	93	....	96	.9	....	....	2	....	2	....	....	1	4	1-10	....
Springport	85	97	95	90	92	.8	1	....	1	....	1	....	1	1	4	1-7	....
Stambaugh	96	90	85	80	88	1.5	2	2	6	1	16	....	2	5	26	1-2	3
Stanwood	90	90	90	....	90	1	....	....	1	....	1	....	....	1	2	....	....
Stephenson	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Stevensville	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Stockbridge	97	95	91	92	94	.5	2	....	2	....	1	....	1	1	6	1-2	....

**TABLE XVII.—*Concluded.*

Incorporated villages.	Percentage of attendance.					Number of regular teachers employed.										Portion of superintendent's time devoted to supervision.	No. of special teachers.
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.		Grammar department.		Primary department.		Kindergarten department.		Whole school.			
						Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.	Men.	Women.		
Sunfield	95	98	92		97	1	1		1		2			1	4		
Sutton's Bay	91	92	92	95	92	1			1		1		1	1	3		
Tecumseh	96	97	94		95	1 5	4		4		6			2	14	1-2	1
Tekonsha	94	93	94	96	94	.7	1		1		1		1	1	4	1-4	1
Thompsonville																	
Three Oaks	96	94	96		95	6	2		3		3			1	8	3-7	1
*Tower																	
Trenton	92	92	87	83	90	5	2		3		4		1	1	10	1-2	1
Tustin	93	91	90	83	88	1	1		1		1		1	1	4		
Twining	90	90	95		92		2		1		1				4		
Ubly	83	71	85		79	1			1		1			1	2		
Union City	95	95	94		95	.7	6		2		3			1	11	3-10	1
Unionville	88	92	90		90	1	1		2		1			1	4		
Utica	95	92	86		90	1	1		1		2			1	4		
Vandalia	92	91	88		90	2			1		1			2	2		
Vanderbilt	94	98	87		92	1	1		1		1			1	3		1
Vassar	94	91	90	83	85	5	4		3		3		2	1	12	1-2	1
Vermontville	95	96	94		95	7	2		2		2			1	6	1-4	
Vernon	88	89	92	88	89	8			1		1		1	1	3	1-6	
Vicksburg	97	95	96	91	95	1.7	3	1	2		3		1	3	9	1-4	
Wakefield	92	93	94	85	91	2 4	3	1	7	1	10		2	5	22	3-5	1
Waldron	97	93	90	90	93	.9	1		1		1		1	1	4	1-10	
*Walkerville																	
Warren		69	75		71			1			1			1	1		
Watervliet	96	95	94	93	94	1 8	2		2		2		1	2	7	1-7	1

Wayland	75	76	74	58	71	.7	1	....	1	....	1	....	1	1	4	1-8	....
Wayne	96	93	90	....	93	.7	3	....	3	....	4	....	....	1	10	2-7	1
Webberville	91	90	92	88	90	1	....	....	1	....	1	....	1	1	3	....	....
*Westphalia	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
White Cloud	93	93	94	79	89	.9	1	....	2	....	2	....	1	1	6	1-10	1
Whitehall	97	98	99	....	98	1	2	....	3	....	3	....	....	1	8	....	1
White Pigeon	97	97	95	70	90	1	2	....	2	....	2	....	1	1	7	....	....
Williamston	91	96	94	....	95	1.7	3	....	2	....	4	....	....	2	9	2-9	1
Wolverine	95	96	95	92	94	1	1	....	3	....	1	....	1	1	6	....	....
Woodland	87	90	91	....	89	1	....	....	1	....	1	....	....	1	2	....	....

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*Not legally graded.
†Included in Lake Linden.
‡Includes Calumet and Red Jacket.
**When blank occurs, report has not been received.

*TABLE XVIII.

Miscellaneous statistics of city and graded village schools

Incorporated cities.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
Adrian	24	37	32	....	31	118	6	3	......	127	$30 00	$16 00	$12 00	....
Albion	23	42	33	....	32	46	6	......	......	52	20 00	15 20	13 30	....
Allegan	20	49	26	....	26	......	......	......	......	72	30 00	19 00	....	....
Alma	23	34	33	32	30	40	9	1	......	59	20 00	20 00	20 00	$20 00
Alpena	20	30	34	....	30	......	......	......	......	36	....	....	....	....
Ann Arbor	22	33	33	....	28	128	12	8	......	148	40 00	15 00	9 00	....
Au Gres	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Au Sable	....	22	26	....	24	......	......	......	......	......	....	14 00	....	....
Bad Axe	32	33	48	33	37	57	2	......	......	59	20 00	17 50	15 00	....
Battle Creek	26	31	35	....	32	120	22	24	......	166	30 00	24 00	18 00	....
Bay City	25	29	35	36	32	75	5	25	1	106	30 00	15 00	10 00	10 00
Beaverton	17	33	39	....	35	17	2	1	......	20	18 00	12 00	12 00	....
Belding	19	31	31	26	27	45	......	......	......	45	20 00	20 00	20 00	20 00
Benton Harbor	28	31	37	41	35	103	12	10	......	125	28 80	18 00	18 00	....
Bessemer	17	29	43	24	27	10	3	......	......	13	26 00	....	....	....
Big Rapids	15	51	31	....	29	33	6	8	......	47	20 00	15 00	12 00	....
Boyne City	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Brown City	15	20	39	52	29	34	2	3	3	42	20 00	15 00	15 00	15 00
Cadillac	25	27	30	30	28	38	......	......	......	38	20 00	15 00	15 00	15 00
Charlevoix	17	25	29	....	23	30	2	......	......	32	18 00	....	....	....
Charlotte	27	32	36	....	32	78	8	3	......	89	25 35	19 50	15 60	....
Cheboygan	22	34	33	....	30	33	3	......	......	36	20 00	20 00	15 00	....
Clare	28	25	36	....	28	50	......	......	......	50	20 00	....	....	....
Coldwater	23	31	28	26	28	76	7	6	1	90	28 00	24 00	24 00	20 00
Coleman	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Corunna	17	36	31	43	28	20	6	......	......	26	20 00	12 00	12 00	12 00
Croswell	19	37	43	34	33	51	......	1	......	52	20 00	....	....	....
Crystal Falls	23	29	30	28	28	7	1	......	......	8	30 00	20 00	....	....
Detroit	21	33	41	21	33	167	51	51	......	269	40 00	14 00	14 00	14 00
Dowagiac	24	33	34	48	32	44	12	18	3	77	20 00	12 00	10 00	10 00
East Jordan	16	28	33	37	28	25	6	1	......	32	19 00	6 65	6 65	....
East Lansing	21	18	32	....	26	7	9	4	......	20	7 20	7 20	7 20	....
East Tawas	17	42	30	26	31	......	......	......	......	......	10 00	10 00	10 00	10 00
Eaton Rapids	20	36	35	27	29	56	5	1	......	62	20 00	12 00	12 00	12 00
Escanaba	19	33	36	27	30	42	......	......	......	42	30 00	20 00	15 00	15 00
Flint	23	36	34	31	33	66	13	......	......	79	36 00	20 00	12 00	12 00
Fremont	25	31	39	....	34	59	3	3	......	65	20 00	10 60	10 00	....
Gladstone	17	37	44	43	32	7	2	......	......	9	....	....	....	....
Gladwin	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Grand Haven	22	39	43	23	32	34	2	3	......	39	20 00	15 00	10 00	....
Grand Ledge	17	33	70	67	32	64	3	2	......	69	20 00	15 00	15 00	15 00
Grand Rapids	18	28	30	30	26	75	14	8	2	99	50 00	40 00	30 00	30 00
Greenville	18	30	39	....	28	53	3	3	......	59	20 00	17 00	15 00	....
Hancock	17	39	40	....	32	26	1	2	......	29	48 00	20 00	20 00	....
Harbor Beach	17	36	47	45	32	11	1	1	......	13	20 00	17 50	15 00	....
Harrison	16	33	23	38	25	16	......	......	......	16	....	....	....	....
Harrisville	33	31	47	52	40	10	2	......	......	12	10 00	....	....	....
Hastings	30	37	43	34	35	108	8	5	......	121	25 00	14 00	14 00	14 00
Hillsdale	26	36	36	....	32	75	10	2	......	87	20 00	15 00	12 00	....
Holland	23	41	39	48	38	40	22	18	2	82	20 00	12 00	12 00	12 00
Hudson	24	27	29	....	27	......	......	......	......	......	20 00	13 30	9 50	....
Ionia	23	24	29	38	25	69	42	12	2	125	20 00	15 00	10 00	10 00
Iron Mountain	24	30	38	....	33	14	11	15	......	40	30 00	10 00	10 00	....
Ironwood	34	36	40	23	33	15	3	......	......	18	45 00	25 00	25 00	25 00
Ishpeming	23	38	36	20	32	......	......	......	......	......	25 00	....	....	....

TABLE XVIII.

as reported by superintendents for the school year 1911-1912.

Average age of class.								Number of pupils studying—				Does school give special instruction in—									
Graduated.	Promoted to high school.	Promoted to grammar department.	Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?	Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
18	14	10	71	1	yes	1-3	12	60	....	....	75	yes	yes	no	yes	yes	no	yes	yes	yes	....
....	....	....	48	5	no	......	12	103	....	....	67	yes	yes	no	yes	yes	no	yes	yes	no	no
...	....	....	39	2	yes	......	12	60	....	....	70	yes	yes	yes	yes	yes	....	yes	yes	no	no
18	....	....	23	1	yes	2-5	12	50	....	....	22	yes	yes	no	yes	yes	no	no	yes	no	no
18	14	10	26	10	no	......	12	81	....	....	45	yes	yes	yes	no	no	no	yes	yes	no	no
19	14	10	95	7	yes	1-8	12	350	12	100	235	yes	yes	no	yes	yes	no	yes	yes	yes	no
....	....	....	....	....	....	......	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	8	....	1	no	......	8	......	....	....	....	....	....	....	....	....	....	....	yes	....	....
19	....	....	22	....	yes	1-4	12	36	....	....	40	yes	yes	....	....	....	....	no	yes	no	no
19	15	11	86	13	yes	1-2	12	270	6	57	151	yes	yes	no	yes	yes	no	yes	yes	yes	no
18	14	11	100	18	yes	1-2	12	340	....	175	180	yes	yes	yes	yes	yes	no	yes	yes	no	yes
17	14	11	8	1	no	1-4	12	6	....	....	4	no	no	no	no	no	no	....	yes	no	no
18	13	9	28	3	yes	......	12	40	....	....	30	yes	yes	yes	yes	no	no	yes	yes	no	no
18	14	10	37	5	yes	......	12	97	....	....	131	yes	yes	yes	yes	yes	no	yes	yes	no	no
17	....	....	18	4	yes	......	12	25	....	....	42	no	yes	....	yes	yes	no	no	yes	no	no
18	14	10	33	4	yes	1-2	12	50	....	....	45	yes	yes	....	yes	....	no	yes	yes	no	no
....	....	....	....	....	....	......	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....
18	12	8	8	1	yes	......	12	......	....	....	....	....	....	....	....	....	....	yes	yes	no	....
18	11	8	27	7	yes	......	12	54	....	....	44	yes	yes	no	yes	yes	no	yes	yes	yes	no
18	14	......	17	4	no	1-4	12	28	....	....	29	yes	yes	yes	yes	no	no	yes	yes	no	no
18	....	......	30	6	no	......	12	55	....	....	48	yes	yes	yes	yes	....	....	yes	yes	no	no
18	....	......	21	8	no	1-8	12	64	....	....	41	yes	yes	....	yes	yes	no	yes	yes	no	....
19	....	......	11	1	no	1-2	12	......	....	....	....	yes	yes	yes	no	no	no	no	yes	no	no
....	....	......	25	4	yes	......	12	56	....	....	69	yes	yes	yes	yes	yes	no	yes	yes	no	no
....	....	....	....	....	....	......	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....
17	14	7	10	1	yes	1-2	12	......	....	....	22	yes	yes	yes	no	no	no	no	yes	no	no
17	13	10	16	2	yes	1-6	12	21	....	....	28	....	....	....	....	....	....	....	yes	no	....
18	14	10	19	12	yes	......	12	29	....	....	31	yes	yes	yes	yes	yes	no	yes	yes	....	no
....	....	......	752	95	yes	......	12	1,656	24	648	1,847	yes	yes	no	yes	yes	no	yes	yes	yes	yes
18	14	10	21	3	yes	......	12	86	....	....	44	yes	yes	yes	no	no	no	yes	yes	no	no
18	14	10	9	2	yes	......	12	25	....	....	19	yes	yes	no	no	no	yes	yes	yes	no	no
....	13	7	....	....	no	1-3	11	7	....	....	43	no	no	no	no	yes	yes	no	yes	no	no
....	....	......	5	1	yes	3-4	12	......	....	....	....	no	no	no	no	no	no	yes	yes	no	no
17	14	10	15	2	yes	......	12	......	....	....	....	yes	yes	yes	yes	yes	no	no	yes	no	no
18	14	10	60	57	yes	......	12	120	....	27	53	yes	yes	yes	no	yes	no	yes	yes	no	no
18	14	11	62	10	yes	......	12	184	11	34	174	yes	yes	yes	yes	yes	no	yes	yes	no	no
18	14	10	17	1	yes	......	12	27	....	....	45	yes	yes	no	no	no	no	yes	yes	no	no
....	....	......	17	1	yes	......	12	......	....	....	....	no	no	yes	no	no	no	yes	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....
18	....	......	26	4	yes	......	12	43	....	....	78	yes	yes	yes	....	....	....	yes	yes	no	no
18	13	9	25	2	yes	1-2	12	30	....	....	65	yes	yes	no	no	....	....	....	yes	....	....
17	14	10	216	35	yes	......	12	603	6	132	668	yes	yes	no	yes	yes	no	yes	yes	yes	yes
18	13	11	23	3	no	......	12	35	....	10	25	yes	yes	yes	no	no	no	yes	yes	no	no
18	13	10	34	2	no	1-4	12	67	....	28	37	yes	yes	yes	yes	no	no	yes	yes	no	no
17	13	9	13	1	yes	1-2	12	19	....	....	17	yes	yes	....	yes	....	....	no	yes	no	....
16	....	......	4	....	no	1-3	12	30	....	....	....	no	no	no	no	no	no	no	yes	....	no
....	15	......	....	1	no	......	11	......	....	....	....	....	....	....	....	....	....	no	yes	no	....
18	14	9	58	4	yes	......	12	89	....	....	43	yes	yes	yes	yes	yes	no	yes	yes	no	no
18	....	......	62	1	yes	1-2	12	......	....	....	....	yes	yes	no	yes	yes	yes	no	yes	no	no
17	14	10	31	5	yes	1-4	12	75	....	....	55	yes	yes	yes	yes	yes	no	no	yes	no	no
....	....	......	26	3	yes	......	12	58	....	....	40	yes	yes	yes	no	no	no	yes	yes	no	no
18	14	10	18	4	yes	......	12	81	....	....	34	yes	yes	yes	yes	yes	no	yes	yes	no	no
18	14	10	52	8	no	1-4	12	69	....	....	29	yes	yes	no	yes	yes	no	yes	yes	no	yes
18	14	10	59	....	yes	......	12	82	....	....	209	yes	yes	yes	yes	yes	no	yes	yes	no	yes
18	12	7	53	....	yes	......	12	83	....	30	104	yes	yes	yes	yes	yes	no	yes	yes	no	no

TABLE XVIII.—*Continued.*

Incorporated cities.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
Jackson	27	33	34	....	33	71	13	12	.....	96	$30 00	$16 00	$12 00	.....
Kalamazoo	18	31	38	28	30	56	19	7	.....	82	38 00	10 00	12 16	.....
Lansing	25	36	37	41	32	101	40	33	.....	174	25 00	12 00	12 00	$12 00
Lapeer	22	41	39	....	33	61	2	.....	.....	63	20 00	16 00	12 00	.....
Ludington	22	28	36	42	26	28	.....	.....	.....	28	20 00	15 00	15 00	15 00
Mackinac Island	20	36	73	....	38	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manistee	21	29	24	31	26	61	2	5	1	69	40 00	14 00	10 00	10 00
Manistique	19	27	34	26	27	19	.....	.....	.....	19	20 00	20 00	20 00	.....
Marine City	15	34	34	25	27	4	6	6	.....	16	20 00	10 00	10 00	10 00
Marquette	20	25	23	26	23	.....	.....	.....	.....	.....	.....	.....	.....	.....
Marshall	21	32	27	....	27	55	5	5	.....	65	20 00	16 00	10 00	.....
Mason	25	29	39	....	29	62	33	.....	.....	95	20 00	12 00	12 00	.....
McBain	12	31	36	34	27	3	.....	.....	.....	3	20 00	.....	.....	.....
Menominee	21	36	35	22	30	18	1	.....	.....	19	19 00	16 00	12 00	.....
Midland	24	43	45	....	35	78	14	18	.....	110	20 00	25 00	19 00	.....
Monroe	23	37	35	23	30	67	15	3	.....	85	25 00	15 00	15 00	15 00
Mt. Clemens	15	41	29	25	27	33	10	8	.....	51	20 00	12 00	10 00	10 00
Mt. Pleasant	29	31	33	32	31	58	3	.....	.....	61	20 00	12 00	12 00	12 00
Muskegon	26	35	35	35	33	36	8	8	.....	52	24 00	20 00	16 00	.....
Muskegon Heights	21	31	28	55	30	4	5	7	.....	16	20 00	16 00	12 00	12 00
Negaunce	19	36	37	37	33	4	.....	.....	.....	4	20 00	.....	.....	.....
Niles	17	29	35	....	30	40	12	.....	.....	52	20 00	15 00	10 00	.....
North Muskegon	....	22	36	....	29	.....	.....	.....	.....	.....	.....	.....	.....	.....
Norway	20	36	37	....	31	10	.....	.....	.....	10	35 00	.....	.....	.....
Omer	24	49	52	15	35	3	.....	.....	.....	3	10 00	.....	.....	.....
Onaway	17	36	30	73	30	11	2	.....	.....	13	20 00	15 00	.....	.....
Owosso	22	44	39	35	34	48	9	7	.....	64	20 00	16 00	12 00	12 00
Petoskey	21	36	33	....	30	30	4	1	.....	35	18 00	9 00	9 00	.....
Pontiac	22	32	35	26	31	95	31	4	.....	130	20 00	18 00	16 00	16 00
Port Huron	25	32	34	....	30	40	6	5	.....	51	19 00	15 00	9 00	.....
Rose City	14	27	44	....	33	3	1	.....	.....	4	10 00	10 00	10 00	.....
Saginaw	16	28	34	....	26	120	7	5	.....	132	40 00	20 00	16 00	.....
Saginaw, W. S.	21	33	35	....	31	23	8	4	.....	35	40 00	20 00	20 00	.....
St. Clair	18	31	40	21	29	17	3	5	1	26	20 00	10 00	7 50	7 50
St. Ignace	13	21	34	....	26	2	.....	.....	.....	2	20 00	10 00	10 00	.....
St. Johns	21	34	34	29	29	86	1	.....	.....	87	25 00	15 00	.....	.....
St. Joseph	19	33	34	41	30	29	5	.....	.....	34	28 80	18 00	18 00	18 00
St. Louis	23	38	34	....	31	52	10	3	.....	65	20 00	10 00	10 00	.....
Sandusky	19	43	50	....	39	21	.....	.....	.....	21	20 00	.....	.....	.....
Sault Ste. Marie	25	36	38	90	38	65	4	.....	.....	69	20 00	.....	.....	.....
Scottville	31	43	35	26	33	34	5	8	.....	47	20 00	15 00	15 00	15 00
South Haven	25	33	33	....	28	96	24	23	.....	143	28 50	11 40	7 60	.....
Standish	....	24	52	....	38	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stanton	21	37	41	40	34	36	.....	.....	.....	36	16 50	12 00	9 50	9 50
Sturgis	18	39	29	70	30	33	7	11	4	55	20 00	14 00	10 00	10 00
Tawas City	14	30	35	....	29	12	1	.....	.....	13	10 00	.....	.....	.....
Three Rivers	22	27	30	26	30	56	5	5	.....	66	20 00	16 00	16 00	.....
Traverse City	22	28	33	32	32	86	10	6	.....	102	30 00	16 00	16 00	16 00
West Branch	23	31	42	46	34	35	3	.....	.....	38	20 00	7 50	7 50	7 50
Whittemore	....	40	49	....	44	.....	2	1	.....	3	.....	.....	.....	.....
Wyandotte	18	25	31	....	27	31	7	5	.....	43	20 00	15 00	15 00	.....
Yale	25	26	34	28	27	72	8	2	.....	82	20 00	15 00	10 00	10 00
Ypsilanti	30	30	27	....	29	55	2	1	.....	58	16 00	10 00	10 00	.....
Zeeland	32	31	32	21	28	35	.....	.....	.....	35	16 00	.....	.....	.....

TABLE XVIII.—*Continued.*

Average age of class.			Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Number of pupils studying—				Does school give special instruction in—						Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
Graduated.	Promoted to high school.	Promoted to grammar department.						Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?				
18	15	11	74	....	no	1-5	12	177	....	22	155	yes	yes	no	yes	yes	no	yes	yes	yes	no
18	14	10	105	11	yes	......	12	274	....	23	185	yes	yes	yes	yes	yes	no	yes	yes	yes	yes
18	14	......	87	14	yes	......	12	229	....	....	260	yes	yes	no	yes	....	....	yes	yes	no	....
18	.....	......	37	3	no	2-3	12	84	....	....	35	yes	yes	yes	no	no	no	yes	yes	no	no
19	15	11	39	7	yes	1-2	12	......	....	....	......	yes	yes	no	yes	yes	no	yes	yes	no	no
....	14	12	....	1	no	......	12	10	....	....	......	....	yes	yes	....	....	....	yes	yes	....	....
17	15	10	35	6	yes	......	12	103	....	4	37	yes	yes	yes	yes	yes	no	yes	yes	no	yes
18	.....	......	27	4	yes	......	12	94	....	....	56	yes	yes	....	no	yes	no	yes	yes	yes	no
17	14	......	7	3	....	1-2	12	24	....	....	7	yes	yes	no	no	no	no	yes	yes	no	no
18	.....	......	40	10	yes	......	12	70	....	39	76	yes	yes	yes	yes	yes	no	yes	yes	no	yes
18	14	10	23	3	no	1-4	12	70	....	....	85	yes	yes	no	yes	yes	no	no	yes	no	no
18	.....	......	23	2	no	......	12	......	....	....	......	....	....	....	....	....	....	no	yes	no	no
18	14	11	5	....	yes	......	12	15	....	....	......	yes	yes	....	....	....	....	no	yes	no	no
19	14	10	51	....	yes	......	12	......	....	....	......	yes	yes	yes	yes	yes	no	yes	yes	no	no
18	14	10	14	3	no	1-2	12	......	....	....	......	yes	no	no	yes	yes	no	yes	yes	no	no
18	14	11	21	5	yes	1-4	12	34	....	....	37	yes	yes	yes	yes	yes	yes	no	yes	no	no
18	14	11	11	5	yes	......	12	40	....	....	38	yes	yes	no	yes	yes	no	yes	yes	no	no
18	14	8	28	4	yes	......	12	20	....	....	18	yes	yes	yes	yes	yes	no	yes	yes	no	no
18	.....	......	68	15	yes	......	12	165	....	39	77	yes	yes	yes	yes	yes	no	yes	yes	yes	no
15	13	10	6	1	yes	......	10	20	....	....	......	yes	yes	no	yes	yes	no	no	yes	no	....
18	14	......	33	3	yes	......	12	47	....	10	38	yes	yes	yes	yes	yes	no	yes	yes	no	no
....	.....	......	18	2	no	......	12	102	....	....	55	yes	yes	no	no	no	no	yes	yes	no	no
....	.....	......	....	1	....	......	9	......	....	....	......	....	....	....	....	....	....	....	yes	....	....
18	13	10	23	5	no	1-3	12	71	....	....	20	yes	yes	no	no	no	no	yes	yes	no	....
17	14	......	3	1	yes	1-3	12	12	....	....	......	no	yes	yes	no	no	no	no	yes	no	no
18	15	11	8	5	yes	1-2	12	30	....	....	21	no	....	....	yes	yes	no	no	yes	no	no
18	14	10	45	4	yes	2-3	12	31	....	....	21	yes	yes	no	yes	yes	no	yes	yes	yes	no
19	.....	......	19	....	no	1-2	12	53	....	....	22	yes	yes	....	....	....	....	yes	yes	yes	no
18	14	10	52	10	yes	......	12	166	....	22	79	yes	yes	no	yes	yes	no	no	yes	no	no
17	14	9	41	14	no	1-3	12	119	....	20	77	yes	yes	yes	yes	....	....	yes	yes	no	no
....	.....	......	1	2	no	1-3	12	......	....	....	......	no	no	yes	no	no	no	yes	yes	no	no
17	14	10	107	....	no	......	12	105	....	71	331	yes	yes	yes	yes	yes	....	yes	yes	yes	yes
17	.....	......	42	11	no	......	12	90	....	90	120	yes	yes	no	yes	yes	no	yes	yes	no	no
18	14	10	17	2	yes	......	12	30	....	....	30	yes	yes	no	....	no	no	yes	yes	no	no
18	14	10	4	3	no	1-10	12	16	....	....	7	no	no	no	no	no	no	yes	yes	no	....
17	.....	......	29	3	yes	1-2	12	96	....	....	57	yes	yes	yes	yes	yes	yes	yes	yes	no	no
17	13	10	24	3	yes	......	12	40	....	....	77	yes	yes	....	yes	yes	yes	....	....	....	....
....	.....	......	17	2	yes	......	12	27	....	....	17	yes	yes	no	yes	no	yes	yes	yes	no	no
18	15	11	3	1	yes	1-2	12	23	....	....	3	no	no	yes	no	no	no	....	yes	no	no
18	.....	......	38	7	yes	1-2	12	112	....	54	27	yes	yes	yes	yes	yes	no	yes	yes	no	yes
18	14	11	19	1	yes	1-2	12	32	....	....	33	yes	yes	yes	no	no	no	yes	yes	no	no
19	14	10	31	4	yes	1-2	12	62	....	....	41	yes	yes	no	yes	yes	yes	yes	yes	no	no
....	.....	......	....	1	no	......	10	......	....	....	......	no	yes	yes	....	....	....	no	yes	no	no
17	14	10	23	1	yes	......	12	22	....	....	35	yes	yes	yes	yes	yes	no	yes	yes	no	no
18	13	10	10	2	yes	......	12	40	....	10	36	yes	yes	no	no	no	yes	yes	yes	....	no
18	13	10	....	....	....	......	12	......	....	....	......	no	no	no	no	no	no	no	yes	no	....
18	14	......	22	3	....	6-7	12	38	....	....	30	yes	yes	yes	yes	yes	no	yes	yes	....	....
19	14	......	67	5	yes	......	12	80	....	....	140	yes	yes	yes	yes	yes	yes	yes	yes	no	yes
18	14	11	12	1	yes	1-3	12	28	....	....	14	yes	yes	yes	no	no	yes	yes	yes	no	no
....	14	10	....	1	....	1-2	10	......	....	....	......	....	....	....	....	....	....	....	yes	....	....
18	14	10	22	3	yes	......	12	19	....	....	67	yes	yes	no	yes	yes	no	no	yes	no	no
19	14	10	11	1	yes	......	12	54	....	....	25	no	yes	no	no	no	no	no	yes	no	....
18	14	10	37	4	no	1-7	12	95	....	....	115	yes	yes	no	yes	yes	no	no	yes	no	....
16	.....	......	7	2	yes	......	12	45	....	....	35	yes	yes	....	....	....	....	yes	yes	no	no

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* When blank occurs item was not reported.

TABLE XVIII.—*Continued.*

Incorporated villages.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
Addison	21	42	36	24	28	50	1	.....	.....	51	$18 00	$12 60	$10 80	$10 80
†Ahmeek	....	....	....	....	....	.....	.....	.....	.....	.....	....	....	....	....
Akron	24	34	55	45	39	9	.....	.....	.....	9	20 00	10 00	10 00	10 00
Alanson	14	30	42	....	32	5	2	.....	.....	7	....	....	....	....
Algonac	20	27	33	22	27	9	.....	.....	.....	9	20 00	9 00	9 00	9 00
Almont	18	26	36	....	31	23	3	2	.....	28	20 00	10 00	10 00	....
Applegate	....	32	24	....	28	.....	3	.....	.....	3	....	9 00	....	....
Armada	17	34	42	....	28	32	4	3	.....	39	14 25	14 25	7 25	....
Ashley	12	36	50	60	34	13	2	2	.....	17	....	....	....	....
Athens	32	24	96	....	36	60	.....	.....	.....	60	20 00	12 00	....	....
Atlanta	....	....	....	....	....	.....	.....	.....	.....	.....	....	....	....	....
Augusta	18	37	33	....	24	25	2	.....	.....	27	19 00	15 20	11 40	....
Baldwin	19	21	31	32	26	.....	.....	.....	.....	.....	....	....	....	....
Bancroft	14	35	38	39	28	19	10	8	2	39	15 00	....	....	....
Bangor	24	33	32	....	31	56	11	10	.....	77	20 00	10 00	10 00	10 00
Baraga	....	....	....	....	....	.....	.....	.....	.....	.....	....	....	....	....
Baroda	15	35	30	31	25	5	.....	.....	1	6	....	....	....	....
Barryton	35	34	23	36	31	10	1	.....	.....	11	14 25	9 50	....	....
Bear Lake	27	19	49	....	29	35	.....	.....	.....	35	20 00	....	....	....
Bellaire	13	35	53	10	27	18	.....	.....	.....	18	18 00	13 50	....	....
Belleville	15	40	50	....	29	31	.....	.....	.....	31	15 00	10 00	5 00	....
Bellevue	14	27	48	....	28	25	3	.....	.....	28	20 00	12 50	12 50	....
Benzonia	19	32	37	....	32	7	4	.....	.....	11	12 60	12 60	9 00	....
Berrien Springs	17	26	28	....	22	23	1	1	.....	25	20 00	12 00	12 00	....
Birmingham	22	38	43	....	32	38	30	25	.....	93	25 00	20 00	12 50	....
Blissfield, No. 1 fr.	....	27	34	....	29	.....	1	.....	.....	1	10 00	....	....	....
Blissfield, No. 2 fr.	27	30	34	....	28	76	4	.....	.....	80	25 00	15 00	15 00	....
Bloomingdale	25	31	29	30	28	33	.....	.....	.....	33	15 00	15 00	15 00	....
Boardman	21	38	51	30	35	5	1	.....	.....	6	9 00	9 00	....	....
Boyne Falls	24	34	49	....	34	1	.....	.....	.....	1	....	....	....	....
Breckenridge	30	41	45	50	39	43	.....	3	.....	46	15 00	15 00	15 00	15 00
Breedsville	23	26	28	....	27	4	2	.....	.....	6	....	....	....	....
Brighton	21	28	37	....	25	30	10	.....	.....	40	15 00	10 00	10 00	....
Britton	12	27	34	....	23	12	5	.....	.....	17	13 50	13 50	13 50	....
Bronson	22	25	30	....	25	48	4	.....	.....	52	19 00	11 60	11 60	....
Brooklyn	20	52	24	....	27	32	8	1	.....	41	20 00	15 00	15 00	....
Buchanan	18	30	35	....	28	31	15	2	.....	48	20 00	9 50	6 33	....
Buckley	....	....	....	....	....	.....	.....	.....	.....	.....	....	....	....	....
Burlington	34	23	23	....	27	6	.....	.....	.....	6	9 00	....	....	....
Burr Oak	27	19	32	16	25	40	.....	.....	.....	40	20 00	13 50	13 50	9 90
Byron	28	25	24	35	28	31	.....	.....	.....	31	20 00	15 00	12 50	10 00
Caledonia	20	24	30	25	24	25	.....	.....	.....	25	20 00	....	....	....
Camden	17	26	17	32	21	24	4	1	3	32	20 00	9 00	9 00	9 00
Capac	27	36	44	....	37	42	4	.....	.....	46	15 00	15 00	10 00	....
Carleton	44	45	25	....	35	25	2	.....	.....	27	15 00	12 00	....	....
Caro	24	38	38	80	37	71	13	.....	.....	84	20 00	10 00	7 80	....
Carson City	....	....	....	....	....	.....	.....	.....	.....	.....	....	....	....	....
Carsonville	19	30	42	39	32	7	.....	.....	.....	7	20 00	10 00	10 00	10 00
Caseville	30	44	57	....	37	12	.....	.....	.....	12	20 00	....	....	....
Casnovia	20	29	20	5	21	12	4	2	.....	18	18 00	....	....	....
Cass City	28	20	52	....	32	69	7	1	.....	77	20 00	15 00	10 00	....
Cassopolis	19	40	34	....	20	41	5	2	.....	48	13 30	11 40	9 50	....
Cedar Springs	21	33	49	22	31	40	3	1	.....	44	20 00	14 25	9 50	....
Central Lake	27	26	36	15	25	16	1	.....	.....	17	19 00	9 50	9 50	....
Centreville	17	29	31	....	21	23	1	1	.....	25	15 00	9 00	6 00	....

TABLE XVIII.—*Continued.*

Average age of class.			Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Number of pupils studying—				Does school give special instruction in—						Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
Graduated.	Promoted to high school.	Promoted to grammar department.						Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?				
17	13	11	6	1	yes	1-3	12	27	....	....	20	no	no	yes	no	no	yes	yes	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	13	10	....	1	no	....	12	16	....	....	....	no	no	yes	no	no	no	no	yes	no	no
16	14	11	2	1	yes	1-4	11	2	....	....	2	....	....	....	....	....	....	no	yes	....	....
20	15	....	2	1	yes	3-4	12	9	....	....	....	yes	yes	yes	no	no	no	yes	yes	no	no
18	14	10	6	1	no	1-8	12	14	....	....	30	no	yes	no	no	no	no	no	yes	no	no
....	....	....	....	1	no	....	8	....	....	....	....	no	no	no	no	no	no	no	yes	no	no
17	13	9	13	1	no	1-5	12	20	....	....	15	yes	yes	yes	no	no	yes	yes	yes	no	no
18	....	....	3	1	no	....	12	18	....	....	6	no	no	yes	no	no	no	no	yes	no	no
....	....	....	16	1	no	....	12	....	....	....	....	yes	yes	yes	no	no	no	no	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
15	11	7	9	1	no	....	12	10	....	....	39	yes	no	no	no	no	no	no	yes	no	....
....	....	....	....	1	yes	1-3	10	....	....	....	....	....	....	yes	....	....	yes	no	yes	no	no
....	....	....	4	1	no	....	12	....	....	....	....	no	no	no	no	no	no	no	yes	no	no
18	....	....	16	1	yes	1-2	12	15	....	....	20	no	no	no	no	no	yes	yes	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	1	no	1-2	12	....	....	....	....	....	....	....	....	....	....	....	yes	....	....
16	14	11	8	1	no	....	10	....	....	....	....	....	no	yes	no	no	no	no	yes	no	no
19	14	11	10	1	yes	....	12	20	....	....	....	....	yes	yes	no	no	no	no	yes	no	no
17	....	....	9	1	yes	1-5	12	12	....	....	20	yes	yes	....	....	....	....	no	yes	no	no
19	14	8	3	1	no	1-4	12	....	....	....	....	no	no	no	no	no	no	yes	yes	no	no
17	14	10	8	1	yes	1-3	12	33	....	....	12	yes	yes	no	no	no	no	yes	yes	no	no
17	14	10	4	1	no	1-4	12	23	....	....	10	....	....	....	....	....	....	....	yes	no	no
17	15	9	5	1	no	1-3	12	16	....	....	15	yes	yes	no	no	no	no	no	yes	no	no
17	....	....	12	1	no	1-3	12	36	....	....	22	yes	yes	no	no	no	no	no	yes	no	no
....	....	....	....	1	no	....	8	....	....	....	....	....	....	....	....	....	....	....	yes	no	....
18	14	10	22	1	no	....	12	40	....	....	28	yes	yes	no	no	....	....	yes	yes	no	no
17	....	....	10	1	yes	....	12	8	....	....	21	....	....	....	....	....	....	....	....	....	....
18	15	10	1	1	no	....	12	....	....	....	....	no	no	yes	no	no	no	....	yes	no	no
....	....	....	1	1	no	....	10	....	....	....	....	yes	no	yes	no	no	no	no	yes	no	no
18	....	....	4	1	yes	....	12	20	....	....	4	....	....	....	....	....	yes	yes	yes	no	no
....	....	....	....	1	no	....	11	....	....	....	....	no	no	yes	no	no	yes	no	yes	no	no
17	13	9	8	1	no	1-5	12	....	....	....	20	yes	no	no	no	no	yes	no	yes	....	....
....	14	9	....	1	no	1-6	12	15	....	....	....	no	no	no	no	no	no	no	yes	....	....
17	14	9	16	1	no	1-4	12	22	....	....	34	yes	no	no	no	no	no	yes	yes	no	no
17	13	9	....	....	yes	1-4	12	58	....	....	....	no	no	no	no	no	no	yes	yes	no	no
17	14	9	4	2	no	1-5	12	19	....	....	21	yes	yes	yes	yes	....	....	yes	yes	no	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
16	14	10	....	....	no	....	10	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	14	8	14	....	yes	1-4	12	24	....	....	....	yes	yes	yes	no	no	no	yes	yes	no	....
15	11	9	8	1	yes	1-4	10	....	....	....	....	....	....	....	....	....	....	....	yes	....	....
16	....	....	8	1	no	3-4	12	28	....	....	16	no	no	no	no	no	no	no	yes	no	no
18	....	....	7	1	no	1-3	12	16	....	....	16	yes	yes	yes	no	no	yes	yes	yes	no	no
....	....	....	8	1	no	....	12	16	....	....	....	no	no	no	no	no	no	no	yes	....	....
17	14	....	7	1	no	....	11	....	....	....	....	....	yes	yes	....	....	....	yes	yes	no	....
17	14	10	30	2	yes	....	12	36	....	....	41	yes	yes	....	....	....	....	....	yes	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
16	14	10	9	1	no	....	10	....	....	....	....	no	no	yes	no	no	yes	no	yes	no	no
....	....	....	....	1	no	....	10	....	....	....	....	no	no	no	no	no	no	no	yes	no	no
18	15	10	3	1	yes	1-3	12	9	....	....	....	no	no	yes	no	no	no	yes	yes	no	no
18	14	10	21	2	no	1-3	12	51	....	....	39	no	no	no	no	no	no	no	....	no	no
17	13	10	13	1	yes	1-3	12	34	....	....	14	yes	yes	yes	no	no	yes	....	yes	no	no
17	14	12	4	1	yes	....	12	8	....	....	13	yes	yes	no	no	no	no	no	yes	no	no
18	14	10	14	1	yes	1-2	12	20	....	....	10	yes	yes	yes	yes	....	yes	....	yes	no	no
18	....	....	6	....	no	1-2	12	26	....	....	18	yes	yes	yes	no	no	yes	no	yes	no	no

TABLE XVIII.—*Continued.*

Incorporated villages.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
Chelsea	22	29	35	....	27	54	8	4	......	66	$25 00	$15 00	$15 00	....
Chesaning	19	30	43	24	29	37	1	......	......	38	20 00	20 00	20 00	$20 00
Clarkston	36	15	35	42	29	16	2	2	......	20	18 00	15 00	15 00	15 00
Clayton	35	15	24	....	22	20	4	......	......	24	18 00	18 00	18 00	....
†Clifford	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Climax	17	28	34	33	26	20	1	......	1	22	18 00	12 60	12 60	12 60
Clinton	18	24	46	....	26	41	11	2	......	54	....	....	....	....
Clio	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Coloma	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Colon	20	40	35	....	29	40	......	......	......	40	20 00	....	....	....
Columbiaville	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Concord	19	25	35	....	25	12	7	4	......	23	12 00	10 00	7 00	....
Constantine	21	35	46	....	31	31	6	3	......	40	....	....	....	....
Coopersville	19	39	33	....	28	58	......	......	......	58	20 00	9 50	9 50	....
Copemish	37	30	46	....	38	3	......	......	......	3	10 80	....	....	....
Custer	....	20	40	....	30	......	......	......	......	......	....	....	....	....
†Daggett	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Dansville	11	28	35	....	22	4	......	2	......	6	10 00	7 50	7 50	....
Davison	18	55	51	....	30	......	......	......	......	......	20 00	12 00	12 00	....
Dearborn	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Decatur	21	27	35	....	27	40	9	4	......	53	20 00	10 00	7 00	....
Deckerville	32	50	51	80	49	42	......	......	......	42	20 00	12 50	10 00	7 50
Deerfield	24	36	44	....	32	12	5	2	......	19	18 00	6 75	4 50	....
De Tour	30	40	38	26	34	......	......	......	......	......	20 00	20 00	20 00	20 00
Dexter	20	32	28	....	23	28	4	......	......	32	25 00	18 00	14 00	....
Dimondale	21	32	21	....	24	15	5	......	......	20	20 00	20 00	20 00	....
Douglas	15	25	30	....	22	8	......	......	......	8	12 00	....	....	....
Dryden	28	28	28	....	28	12	1	1	......	14	....	....	....	....
Dundee	18	35	44	27	31	25	......	......	......	25	20 00	....	....	....
Durand	17	30	55	50	32	13	11	......	......	24	20 00	10 00	10 00	....
†Eagle	....	....	....	....	....	......	......	......	......	......	....	....	....	....
East Grand Rapids	23	48	28	23	30	2	1	2	......	5	20 00	....	....	....
†East Lake	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Eau Claire	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Ecorse	9	40	42	61	39	......	......	......	......	......	....	....	....	....
Edmore	25	42	47	....	39	24	11	......	......	35	19 00	9 50	7 13	....
Edwardsburg	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Elberta	15	31	41	56	30	4	......	......	......	4	20 00	....	....	....
Elk Rapids	27	26	21	....	25	23	2	......	......	25	20 00	20 00	20 00	....
Elkton	21	23	39	....	28	22	1	3	......	26	20 00	15 00	10 00	....
Elsie	20	31	35	....	28	39	7	2	......	48	19 00	11 87	9 50	....
†Emmet	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Empire	22	30	36	43	31	15	1	3	1	20	20 00	9 00	9 00	9 00
Essexville	....	20	39	....	29	......	1	4	......	5	....	....	....	....
Evart	21	44	45	27	34	61	1	......	......	62	20 00	10 00	10 00	10 00
Fairgrove	13	37	39	36	28	9	6	2	......	17	20 00	10 00	10 00	10 00
Farmington	20	40	40	....	33	31	4	2	......	37	16 00	10 00	10 00	....
Farwell	12	29	35	....	26	7	......	3	......	10	15 00	6 30	6 30	....
Fennville	26	32	38	....	32	33	3	......	......	36	18 00	18 00	18 00	....
Fenton	28	37	31	....	32	69	20	13	......	102	20 00	20 00	16 00	....
Fife Lake	40	41	30	....	37	10	......	......	......	10	15 75	....	....	....
Flushing	28	41	61	....	41	47	12	5	......	64	20 00	12 00	10 00	....
Ford	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Forestville	....	34	56	....	45	......	......	......	......	......	....	....	....	....
Fowler	....	....	....	....	....	......	......	......	......	......	....	....	....	....

TABLE XVIII.—*Continued.*

Average age of class.								Number of pupils studying—				Does school give special instruction in—									
Graduated.	Promoted to high school.	Promoted to grammar department.	Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?	Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
18	13	11	26	1	no	1-2	12	22	....	....	41	yes	yes	no	no	no	no	....	yes	no	no
18	14	8	6	....	yes	1-2	12	30	....	....	18	yes	yes	yes	no	no	no	no	yes	no	no
17	14	12	7	1	no	....	12	9	....	....	....	no	no	yes	no	no	no	no	yes	no	no
17	....	....	11	1	no	1-4	10	....	....	....	....	no	no	no	no	no	no	no	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	14	10	7	1	no	1-3	12	4	....	....	....	yes	yes	yes	no	no	yes	yes	yes	no	no
17	14	11	12	1	no	....	12	26	....	....	14	yes	no	no	no	no	yes	no	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	....	....	10	1	yes	1-2	12	26	....	....	10	yes	yes	no	no	no	no	yes	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	13	7	5	1	no	1-3	12	12	....	....	....	yes	yes	no	no	no	no	no	yes	no	....
17	14	10	13	1	no	1-2	12	40	....	....	22	yes	yes	no	no	no	no	no	yes	....	....
18	....	9	8	1	yes	1-4	....	15	....	....	12	....	....	....	....	....	....	no	yes	....	no
16	....	....	3	1	no	....	10	....	....	....	....	....	....	....	....	....	....	no	yes	....	....
....	14	10	....	1	no	....	9	....	....	....	....	no	no	yes	yes	no	no	no	no	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	no	1-3	12	....	....	....	....	....	....	....	....	....	....	no	yes	....	no
....	....	....	6	....	no	....	12	24	....	....	7	yes	yes	no	no	no	no	no	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
19	14	10	9	1	no	1-3	12	27	....	....	18	no	no	no	no	no	no	no	yes	no	no
....	....	....	....	1	no	1-2	12	9	....	....	....	yes	yes	yes	no	no	no	no	....	no	no
18	14	11	10	1	no	1-6	12	....	....	....	....	no	yes	no	no	no	yes	no	yes	no	no
17	15	10	9	1	no	1-3	10	....	....	....	17	no	no	no	no	no	no	....	yes	yes	no
18	....	....	19	1	....	....	12	36	....	....	35	yes	yes	....	....	....	....	....	yes	no	....
15	13	9	11	....	no	....	10	....	....	....	....	no	no	no	no	no	no	no	yes	no	no
19	12	9	6	1	no	....	12	16	....	....	8	no	no	yes	no	no	no	no	yes	no	no
....	....	....	....	1	no	....	12	7	....	....	....	no	no	no	no	no	no	no	yes	no	no
17	14	11	13	1	yes	....	12	19	....	....	20	no	yes	yes	no	no	no	yes	yes	no	no
17	13	10	12	2	yes	....	12	22	....	....	29	no	no	yes	no	no	no	yes	yes	yes	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	5	....	yes	....	8	....	....	....	....	yes	yes	yes	no	no	no	no	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	14	10	1	1	yes	1-2	10	9	....	....	....	yes	yes	no	no	no	no	no	yes	no	no
18	14	7	3	1	yes	1-2	12	50	....	....	....	....	....	....	....	....	....	no	yes	no	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
16	13	8	1	1	yes	1-2	12	15	....	....	....	....	....	....	....	....	....	no	yes	no	no
19	15	12	24	3	yes	....	12	41	....	....	27	yes	yes	no	no	no	yes	no	yes	no	no
18	13	9	6	1	yes	1-4	12	15	....	....	....	....	....	yes	....	....	yes	no	yes	no	....
18	13	9	6	1	no	1-3	12	20	....	....	4	no	no	no	no	no	yes	yes	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	14	....	10	2	yes	1-2	12	10	....	....	8	no	no	no	no	no	no	yes	yes	no	no
....	13	8	5	1	no	....	8	....	....	....	....	yes	yes	no	no	no	no	no	yes	no	no
18	14	11	17	1	yes	....	12	68	....	....	26	no	no	no	no	no	no	no	yes	no	no
15	13	10	1	1	yes	....	12	25	....	....	23	no	yes	yes	no	no	no	yes	yes	no	no
19	14	10	5	1	no	....	12	29	....	....	10	....	....	....	....	....	....	yes	yes	no	....
18	14	10	3	1	no	1-2	12	12	....	....	10	no	no	yes	no	no	yes	no	yes	no	no
19	13	10	8	1	no	....	12	37	....	....	12	no	no	no	no	no	no	yes	yes	no	no
18	14	10	29	1	no	....	12	65	....	....	69	yes	yes	yes	no	no	no	no	yes	no	no
16	12	9	6	1	no	1-4	10	....	....	....	....	no	no	no	no	no	no	....	yes	no	no
18	14	10	17	1	yes	....	12	60	....	....	....	yes	yes	yes	no	no	yes	no	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	1	no	....	9	....	....	....	....	no	no	yes	no	no	no	....	yes	no	no
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....

TABLE XVIII.—*Continued.*

Incorporated villages.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
Fowlerville	16	25	35	14	23	53	3			56	$20 00	$16 00	$16 00	$16 00
Frankenmuth														
Frankfort	19	30	28	40	29	19				19	25 00			
Fraser														
Freeport	15	32	24	39	25	14	1			15	15 00	9 00	9 00	9 00
Fruitport	22	31	49		34									
Gagetown	10	22	46		22	10				10	20 00			
Gaines	22	25	28		25	18	14	9		41	20 00	12 50	7 50	
Galesburg	13	15	43		22	14	14	16		44	50 00	30 00	25 00	
Galien	19	47	41		30	14				14	18 00			
Garden														
Gaylord	18	24	29	24	24									
Gobleville	31	32	50		38	47				47	20 00	10 00	10 00	
Grandville	15	37	29	19	26	25				25	22 50			
Grant														
Grass Lake														
Grayling	16	36	45		33									
Grosse Pointe														
Grosse Pointe Farms														
Grosse Pointe Park														
Grosse Pointe Shores		26	33		29		6	10		16		14 00	14 00	
Hamtramck		27	54	43	40		5	6		11		7 50	7 50	7 50
Hanover	20	21	40		28	6	4			10	9 00			
Harbor Springs	15	44	43	27	32	7	1			8	9 50	6 75		
Harrietta	26	25	58	26	35						21 00			
Hart	19	34	43	35	30	76	4	2		82	20 00	12 00	8 00	
Hartford	27	45	43		38	52	17	3		72	20 00	13 50	9 00	
Hersey														
Hesperia	15	33	33	39	26	12	1			13	20 00	8 00	8 00	8 00
Highland Park	11	25	32	28	26	4	12			16	35 00	16 00	16 00	16 00
Hillman														
†Hilltop														
Holly	28	33	35		31	38	6	3		47	20 00	14 00	14 00	
Homer	18	17	60		26	34	7			41	20 00	10 00	10 00	
Houghton														
Howard City	23	27	46		33	33				33	19 00	19 00	19 00	
Howell	24	32	29		29	100				100	20 00	16 00	16 00	
Hubbardston	12	24	23		18	12	1	2		15	15 00	9 00	9 00	
**Hubbell														
Imlay City														
Iron River	19	35	42	40	32	1				1	20 00	15 00	15 00	15 00
Ithaca	25	38	41	38	33	92	9	3		104	20 00	10 00	10 00	10 00
Jonesville	25	21	38		32	41	9			50	20 00	15 00		
Kalkaska	15	27	28	28	23	25	1			26	20 00	13 50	9 00	
Kent City	30	35	70		42	35	9	5		49	19 00	14 50	9 50	
Kinde	34	57	59		50	4	3	5		12	12 50	7 50	5 00	
Kingsley	25	28	35		30	15	1			16	20 00	11 25	11 25	
Kingston														
Laingsburg	15	24	33	27	23	18	4	1		23	15 00	10 00	9 00	5 00
Lake Ann	25		35		30									
Lake City	26	30	60		36	30	5			35	18 00	9 00	9 00	
Lake Linden	13	22	25		20						40 00			
Lake Odessa	26	25	36		29	55	9	6		70	19 00	14 25	9 50	
Lakeview	30	34	42	18	30	68	2			70	20 00	14 25	9 50	
L'Anse	10	22	37	31	25						20 00	15 00	15 00	15 00

TABLE XVIII.—*Continued.*

Average age of class.			Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Number of pupils studying—				Does school give special instruction in—						Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
Graduated.	Promoted to high school.	Promoted to grammar department.						Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?				
18	14	9	9	2	yes	......	12	24	....	....	23	yes	yes	....	....	....	....	....	yes	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	14	10	11	3	yes	......	12	30	....	....	30	no	yes	no	yes	no	no	no	yes	no	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	14	9	3	1	yes	......	12	13	....	....	......	no	no	no	no	no	yes	no	yes	no	no
16	......	......	11	1	no	1-2	10	......	....	....	......	....	....	yes	....	....	....	....	yes	no	no
....	......	......	3	1	no	1-2	12	12	....	....	......	no	no	no	no	no	no	no	yes	....	no
15	12	8	7	1	no	1-4	10	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
16	10	8	5	1	no	1-3	12	15	....	....	15	yes	yes	yes	yes	yes	no	no	yes	no	no
....	......	......	8	....	no	......	12	30	....	....	......	no	no	no	no	no	no	no	yes	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
17	14	10	14	1	yes	......	12	17	....	....	22	....	no	no	no	no	no	....	yes	no	no
....	......	......	17	1	no	......	12	48	....	....	17	no	no	yes	no	no	yes	yes	yes	no	no
....	......	......	7	1	yes	......	12	3	....	....	5	no	no	no	no	no	no	no	yes	no	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	14	......	14	1	no	......	12	12	....	....	18	no	yes	yes	no	no	no	no	yes	no	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	14	10	12	2	no	1-2	8	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
....	13	10	14	1	yes	......	8	......	....	....	......	yes	yes	no	no	no	no	no	yes	no	no
....	......	......	....	2	no	......	.12	3	....	....	......	....	....	....	....	....	....	....	yes	yes	no
17	14	......	11	1	yes	......	12	21	....	....	24	yes	yes	yes	yes	no	no	yes	yes	no	....
....	......	......	....	1	no	......	10	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
18	14	9	13	....	yes	......	12	42	....	....	30	yes	no	no	no	no	yes	yes	yes	....	....
16	13	10	10	1	no	1-2	12	16	....	....	12	yes	yes	no	no	no	no	no	yes	no	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	......	......	7	1	yes	1-5	12	25	....	....	......	....	....	yes	....	....	....	....	yes	no	no
....	14	10	....	3	yes	......	10	50	....	4	70	yes	yes	no	yes	yes	no	yes	yes	yes	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	14	10	18	1	no	1-6	12	45	....	....	22	yes	yes	no	no	no	no	no	yes	no	no
18	......	......	12	....	no	1-3	12	25	....	....	20	yes	yes	no	yes	no	no	yes	yes	no	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	......	......	15	1	yes	1-5	12	45	....	....	15	yes	yes	no	no	no	no	yes	yes	no	no
18	14	10	22	3	no	1-2	12	63	....	....	41	yes	yes	no	no	no	no	no	yes	no	....
18	13	9	2	....	no	......	12	17	....	....	......	....	....	....	....	....	....	....	yes	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	13	9	10	3	yes	......	12	30	....	....	22	yes	yes	no	no	no	no	no	yes	yes	no
18	14	10	33	1	yes	......	12	45	....	....	43	yes	yes	no	yes	no	no	no	yes	no	no
17	13	9	8	1	no	1-3	12	26	....	....	14	yes	no	no	no	no	no	....	yes	no	no
17	12	8	7	1	yes	1-3	12	24	....	....	8	yes	yes	yes	no	no	no	yes	yes	no	no
18	14	10	4	1	yes	1-2	12	53	....	....	......	no	yes	no	no	no	no	....	yes	....	....
14	......	......	10	....	no	......	10	......	....	....	......	no	no	yes	no	no	no	no	yes	no	no
16	15	9	6	1	no	1-4	10	......	....	....	......	no	no	no	no	no	yes	no	yes	no	no
....	....	....	....	....	....	......	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
18	14	11	7	1	yes	1-3	12	20	....	....	......	no	no	no	no	no	no	no	yes	no	no
....	......	......	....	1	no	......	10	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
18	14	10	7	1	no	1-2	12	30	....	....	......	yes	yes	yes	no	no	yes	yes	yes	no	no
18	14	10	24	6	no	1-3	12	38	....	....	30	yes	yes	no	no	yes	no	yes	yes	no	no
18	13	......	15	....	yes	......	12	36	....	....	18	yes	yes	yes	no	no	no	no	yes	no	....
17	......	......	22	....	yes	1-4	12	21	....	....	16	yes	....	yes	....	....	yes	yes	yes	no	no
18	14	11	5	6	yes	......	12	20	....	....	8	no	no	no	no	no	no	yes	yes	no	no

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TABLE XVIII.—*Continued.*

Incorporated villages.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department	Primary department	Kindergarten department
‡Laurium	19	30	36	17	28	157	......	......	......	157	$60 00	$20 00	$20 00	$20 00
Lawrence	20	31	32	....	28	......	......	......	......	......	20 00	12 00	12 00	....
Lawton	19	28	23	28	23	22	6	2	......	30	20 00	10 00	10 00	....
Leonard	20	38	40	....	32	2	......	......	......	2	12 00	9 00	5 00	....
Le Roy	18	31	27	....	24	10	1	......	......	11	28 00	18 00	....	....
Leslie	23	33	28	21	29	51	11	4	......	66	20 00	16 00	12 00	12 00
Lexington	10	33	26	....	22	8	2	3	......	13	....	....	....	....
†Lincoln	....	24	48	....	36	......	......	......	......	......	....	....	....	....
Linden	17	22	34	....	24	26	......	......	......	26	20 00	7 50	7 50	....
Lisbon	27	....	26	....	26	2	......	......	......	2	9 00	....	....	....
Litchfield	15	36	36	37	26	34	......	......	......	34	20 00	20 00	12 00	9 00
Lowell	27	30	31	32	30	81	1	3	......	85	20 00	....	....	....
Luther	35	34	51	....	40	15	......	2	......	17	20 00	10 00	10 00	....
Lyons	15	39	47	....	31	15	4	......	......	19	12 00	6 00	....	....
Mackinaw City	18	40	25	63	36	......	2	......	......	2	....	....	....	....
Mancelona	20	31	28	27	26	23	6	......	......	29	13 50	13 50	....	....
Manchester	21	28	27	....	24	30	......	......	......	30	20 00	....	....	....
Manton	25	52	34	14	32	34	......	......	......	34	20 00	....	....	....
Maple Rapids	22	25	17	....	21	19	3	......	......	22	....	....	....	....
Marcellus	20	40	41	....	31	33	7	2	......	42	12 60	12 60	12 60	....
Marion	25	39	54	....	39	26	......	......	......	26	14 25	9 50	4 75	....
†Marlborough	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Marlette	28	38	38	19	32	54	3	......	......	57	20 00	10 00	....	....
†Maybee	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Mayville	....	....	....	....	....	......	......	......	......	......	....	....	....	....
McBride	24	31	32	....	29	4	......	......	......	4	9 50	....	....	....
Mecosta	....	....	....	....	....	......	......	......	......	......	....	....	....	....
†Melvin	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Memphis	27	20	30	25	27	34	......	......	......	34	18 00	....	....	....
Mendon	17	34	28	....	26	28	10	8	......	46	25 00	11 88	11 87	....
†Merrill	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Mesick	82	35	32	....	45	8	......	......	......	8	9 00	....	....	....
Metamora	16	22	35	....	21	9	2	......	......	11	15 00	10 00	10 00	....
Middleville	....	....	....	....	....	......	......	......	......	......	....	....	....	....
†Mikado	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Milan	14	28	41	....	29	20	4	......	......	24	20 00	9 00	9 00	....
Milford	26	33	26	....	28	53	6	3	......	62	16 00	10 00	10 00	....
Millersburg	20	50	35	58	41	1	3	......	2	6	20 00	10 00	10 00	10 00
Millington	25	28	43	38	34	45	2	......	1	48	20 00	12 00	12 00	12 00
Minden City	33	41	66	....	47	2	2	4	......	8	....	....	....	....
Montague	16	26	38	....	27	16	4	3	......	23	13 50	9 00	9 00	....
Montgomery	15	30	25	29	22	37	3	......	......	40	20 00	9 00	....	....
Montrose	20	37	34	36	32	26	......	......	......	26	20 00	10 00	10 00	10 00
Morenci	21	34	37	....	29	46	7	4	......	57	18 00	14 00	12 00	....
Morley	32	35	47	....	38	9	4	......	......	13	7 60	....	....	....
Morrice	20	30	24	24	23	18	......	......	......	18	20 00	7 50	7 50	7 50
Mt. Morris	38	35	49	....	30	34	7	......	......	41	20 00	10 00	....	....
Mulliken	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Muir	....	....	....	....	....	......	......	......	......	......	....	....	....	....
Munising	17	28	38	48	31	6	5	3	......	14	....	....	....	....
Nashville	20	40	29	....	28	42	3	4	......	49	20 00	12 00	12 00	....
Newaygo	22	33	33	34	30	18	......	......	......	18	13 00	....	....	....
New Baltimore	15	20	45	....	21	27	......	......	......	27	10 00	....	....	....
†Newberry	....	....	....	....	....	......	......	......	......	......	....	....	....	....
New Buffalo	7	41	57	....	28	7	......	......	......	7	20 00	....	....	....

TABLE XVIII.—*Continued.*

Average age of class.			Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Number of pupils studying—				Does school give special instruction in—						Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
Graduated.	Promoted to high school	Promoted to grammar department.						Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?				
18	14	10	75	21	yes	......	12	251	....	27	205	yes	yes	no	yes	yes	no	yes	yes	yes	yes
18	14	10	13	1	no	1-4	12	36	....	....	23	yes	yes	yes	....	....	....	no	yes	....	....
18	14	10	4	1	yes	1-2	12	10	....	....	30	....	....	....	....	....	yes	....	yes	no	no
16	13	9	4	1	no	......	10	......	....	....	......	no	no	no	no	no	no	no	yes	yes	....
17	14	11	5	1	no	1-4	12	12	....	....	......	no	no	no	no	no	no	no	yes	no	no
18	14	10	18	1	yes	1-2	12	40	....	....	33	yes	yes	no	no	no	no	yes	yes	no	no
18	15	9	2	....	no	......	....	......	....	....	......	no	no	yes	no	no	no	yes	yes	no	no
....	15	10	1	1	no	......	8	......	....	....	......	no	no	no	no	no	no	no	yes	....	....
18	....	......	6	1	yes	1-4	12	25	....	....	12	no	no	no	no	no	yes	no	yes	no	no
16	13	8	....	1	yes	......	10	......	....	....	......	....	....	....	....	....	....	....	yes	....	....
17	14	10	10	1	no	......	12	20	....	....	22	yes	no	yes	no	no	yes	no	yes	no	no
18	13	9	16	3	yes	......	12	23	....	....	35	yes	yes	no	no	no	no	yes	yes	no	no
16	14	10	6	1	no	......	....	......	....	....	......	yes	no	no	no	no	no	....	....	no	no
18	14	10	8	....	yes	......	12	13	....	....	......	....	yes	....	....	....	....	....	yes	....	....
....	14	......	....	1	no	......	10	......	....	....	......	no	no	yes	no	no	no	....	yes	....	....
17	14	9	11	3	yes	1-2	12	24	....	....	18	yes	yes	yes	yes	yes	....	yes	yes	no	no
17	....	......	18	2	no	1-10	12	27	....	....	......	yes	yes	yes	no	no	yes	....	yes	no	no
18	14	......	12	1	no	1-2	12	20	....	....	14	yes	yes	yes	no	....	....	yes	yes	no	no
17	13	10	2	1	no	......	12	5	....	....	4	no	no	yes	no	no	no	no	yes	no	no
18	15	10	9	1	no	......	12	29	....	....	16	yes	yes	no	no	no	no	yes	yes	no	no
17	14	10	7	1	no	......	12	......			......	....	....	....	....	....	....	....	yes	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	......	24	1	yes	1-2	12	38	....	....	16	no	yes	no	no	no	no	yes	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	15	10	....	1	....	......	11	7	....	....	......	....	....	....	....	....	....	no	yes	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
17	13	9	5	1	....	......	....	26	....	....	......	....	no	yes	no	no	no	no	....	....	....
18	13	10	10	1	no	1-6	12	11	....	....	13	yes	no	no	no	no	yes	yes	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
14	....	......	8	1	no	1-2	11	......	....	....	......	....	....	....	....	....	....	no	yes	no	no
16	14	11	1	1	no	1-4	12	7	....	....	......	no	no	no	no	no	yes	no	yes	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
17	....	......	12	1	yes	1-2	12	18	....	....	13	no	no	no	no	no	no	no	yes	no	no
17	....	......	12	1	no	2-5	12	12	....	....	8	yes	yes	yes	...	....	....	yes	yes	....	....
19	15	12	6	2	yes	1-2	10	......	....	....	......	no	no	no	no	no	no	yes	yes	no	no
....	....	......	11	1	yes	1-2	12	7	....	....	8	no	yes	yes	no	no	no	....	yes	no	no
....	....	......	....	1	no	......	9	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
18	....	......	8	1	no	1-6	12	14	....	....	13	yes	no	yes	no	no	no	no	yes	no	no
18	14	9	14	....	no	1-2	12	28	....	....	......	yes	yes	yes	no	yes	yes	yes	yes	....	....
....	....	......	....	1	no	......	10	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
18	15	9	18	1	no	......	12	30	....	....	17	yes	no	no	no	no	no	no	yes	no	no
17	15	......	6	1	no	1-8	10	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
18	....	......	11	1	no	......	12	4	....	....	15	....	....	yes	....	....	....	yes	yes	no	no
17	14	9	8	1	yes	1-2	12	......	....	....	......	no	no	no	no	no	no	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	10	9	7	yes	......	12	26	....	12	5	yes	yes	no	yes	no	no	yes	yes	no	no
18	14	10	11	1	yes	......	12	17	....	....	21	yes	....	....	yes	....	....	yes	yes	no	no
18	15	10	13	....	yes	......	12	15	....	....	24	....	yes	yes	....	....	yes	yes	yes	no	no
18	....	......	4	1	no	......	12	12	....	....	4	yes	yes	....	yes	no	no	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
17	15	9	5	1	yes	......	12	2	....	....	8	no	no	no	no	no	no	yes	yes	no	no

14 10 15 5 3 4 17

TABLE XVIII.—*Continued.*

Incorporated villages.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
New Haven	33	29	53	....	38	12	2	....	....	14	$15 00	$10 00	$10 00	....
North Adams	15	30	30	....	19	43	3	....	....	46	20 00	14 25	14 25	....
North Branch	23	24	39	....	28	47	5	....	....	52	15 00	15 00	15 00	....
Northport	22	31	45	....	32	8	2	....	....	10	27 00	18 00	....	....
Northville	23	30	26	19	25	35	10	3	....	48	20 00	16 00	12 00	$12 00
Oakley	....	29	25	....	27	....	3	....	....	3	....	....	....	....
†Oakwood	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Olivet	22	20	29	....	23	27	4	....	....	31	20 00	12 00	12 00	....
Onekama	25	33	48	....	32	....	....	....	....	....	20 00	9 00	9 00	....
†Onsted	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ontonagon	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Orion	15	29	35	....	26	16	1	....	....	17	15 00	8 00	8 00	....
Ortonville	13	50	56	....	33	10	4	....	....	14	12 50	7 50	7 50	....
Oscoda	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Otisville	8	40	40	....	28	17	2	2	....	21	20 00	8 00	6 00	....
Otsego	17	23	25	....	22	34	7	2	....	43	28 50	15 20	15 20	....
Otter Lake	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ovid	20	38	30	....	27	83	....	....	....	83	....	....	....	....
†Owendale	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Oxford	23	32	34	38	30	33	....	1	....	34	20 00	12 00	10 00	10 00
Parma	24	25	37	....	28	17	7	3	....	27	12 00	10 50	9 00	....
Paw Paw	26	15	49	29	30	66	7	....	....	73	20 00	13 00	10 00	10 00
†Peck	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Pellston	14	40	40	40	31	16	2	....	....	18	13 50	13 50	....	....
Pentwater	13	29	27	27	27	9	4	2	....	15	15 00	9 00	6 00	6 00
†Perrinton	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Perry	16	35	36	....	29	10	1	1	....	12	....	....	....	....
Petersburg	24	32	35	25	30	19	3	6	3	31	18 00	13 50	12 00	12 00
Pewamo	24	13	27	28	23	4	5	6	6	21	9 00	9 00	9 00	9 00
Pierson	11	....	69	....	40	1	....	2	....	3	6 00	....	6 00	....
Pigeon	20	25	38	58	32	22	....	....	....	22	20 00	....	....	....
Pinckney	21	32	24	....	25	25	5	....	....	30	15 00	12 50	10 00	....
Pinconning	18	29	56	70	39	9	....	1	....	10	20 00	....	....	....
Plainwell	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Plymouth	20	84	35	31	27	31	14	1	....	46	20 00	14 00	8 00	8 00
Port Austin	12	29	51	....	29	6	8	22	....	36	....	....	....	....
Port Hope	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Portland	22	22	33	....	26	....	....	....	....	....	20 00	15 20	11 40	....
Port Sanilac	23	31	45	....	33	4	....	....	....	4	9 00	....	....	....
†Posen	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Potterville	37	40	15	....	29	17	....	....	....	17	20 00	9 00	9 00	....
Quincy	27	15	40	45	30	63	....	....	....	63	20 00	15 00	5 50	....
Reading	28	36	39	....	33	50	7	1	....	58	20 00	14 25	11 87	....
†Redford	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Red Jacket	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Reed City	18	31	33	32	27	28	....	....	....	28	20 00	10 00	10 00	10 00
Reese	9	50	62	....	32	6	2	1	....	9	15 00	10 00	7 50	....
Richland	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Richmond	8	27	41	....	25	26	....	....	....	26	20 00	....	....	....
River Rouge	11	34	34	27	29	6	2	....	....	8	20 00	15 00	15 00	15 00
Rochester	24	45	41	43	36	29	8	3	....	40	20 00	15 00	10 00	10 00
Rockford	28	40	56	....	40	56	16	4	....	76	18 00	12 00	12 00	....
Rogers	17	50	62	....	42	4	....	....	....	4	18 00	....	....	....
Romeo	23	57	33	28	33	43	2	3	....	48	20 00	14 00	8 00	....
Roscommon	9	26	46	20	22	....	....	....	....	....	....	....	....	....

TABLE XVIII.—*Continued.*

Average age of class.			Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school.	Number of pupils studying—				Does school give special instruction in—						Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
Graduated.	Promoted to high school.	Promoted to grammar department.						Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?				
16	13	9	6	1	no	1-4	10	....	....	....	....	no	no	yes	no	no	no	yes	yes	no	no
17	13	9	20	1	no	....	12	15	....	....	12	no	no	no	no	yes	yes	no	yes	....	....
17	13	9	12	....	no	....	12	24	....	....	....	no	no	no	no	no	no	no	yes	....	no
17	14	8	4	1	no	1-5	12	....	....	....	17	no	yes	no	no	no	no	....	yes	no	....
17	14	10	22	1	yes	....	12	25	....	....	24	....	yes	no	no	no	no	....	yes	no	no
....	13	9	....	1	no	....	8	....	....	....	....	no	yes	yes	no	no	no	no	yes	no	no
18	13	10	7	....	yes	1-5	12	32	....	....	23	yes	yes	yes	no	no	no	no	yes	no	no
16	13	....	6	1	no	1-4	12	16	....	....	8	no	no	no	no	no	yes	no	yes	no	no
18	14	11	6	1	no	1-6	12	25	....	....	11	no	no	yes	no	no	yes	no	yes	no	no
18	14	10	6	1	no	....	12	9	....	....	....	no	no	no	no	no	no	no	yes	no	no
....	....	....	....	1	no	1-2	12	4	....	....	....	no	no	no	no	no	yes	no	yes	no	no
17	15	10	18	2	yes	....	12	14	....	....	29	yes	yes	no	yes	yes	yes	no	yes	no	no
17	....	....	28	1	no	....	12	....	....	....	....	....	....	....	....	....	....	....	yes	....	....
18	14	11	18	1	yes	....	12	14	....	....	42	yes	no	no	no	no	yes	yes	yes	no	no
17	13	10	11	1	no	....	12	....	....	....	11	no	no	no	no	no	yes	no	yes	no	no
17	13	....	21	1	yes	....	12	36	....	....	22	yes	yes	no	yes	yes	no	yes	yes	no	....
17	14	10	7	....	yes	1-4	12	7	....	....	9	no	yes	yes	no	no	yes	no	yes	no	no
18	14	11	10	1	yes	....	12	18	....	....	6	yes	yes	no	no	no	no	yes	yes	yes	no
18	14	....	4	....	yes	....	12	15	....	....	6	no	no	no	no	no	no	no	yes	no	no
18	14	10	6	1	yes	....	12	5	....	....	17	no	yes	yes	no	no	yes	no	yes	no	no
....	....	....	....	1	no	1-5	12	17	....	....	4	no	no	yes	no	no	no	no	yes	....	....
15	....	11	4	1	no	1-2	10	....	....	....	....	yes	....	yes	....	....	....	yes	yes	....	....
18	14	10	....	1	yes	1-2	12	11	....	....	35	no	no	yes	no	no	yes	no	yes	no	no
18	14	10	5	....	no	....	12	22	....	....	12	....	....	....	....	....	....	....	yes	no	....
....	....	....	4	1	yes	3-4	12	....	....	....	15	no	no	no	no	no	no	yes	yes	no	no
18	14	10	12	1	yes	....	12	30	....	....	37	no	yes	no	yes	yes	yes	no	yes	no	no
....	13	8	....	1	no	1-7	12	12	....	....	14	no	no	no	no	no	no	no	yes	no	no
19	14	11	14	1	yes	1-3	12	30	....	....	40	yes	yes	....	....	....	....	....	yes	no	....
....	....	....	6	1	no	....	10	....	....	....	....	no	no	no	no	no	no	no	yes	....	....
16	....	....	....	1	no	....	12	3	....	....	....	no	....	yes	....	....	....	no	yes	no	no
18	....	....	15	1	yes	1-6	12	35	....	....	30	no	yes	yes	no	no	yes	no	yes	....	....
17	14	9	19	....	no	1-8	12	25	....	....	32	yes	yes	no	no	no	no	no	yes	no	no
18	14	10	8	1	yes	1-3	12	....	....	....	....	yes	yes	no	no	no	no	no	yes	no	no
18	....	....	4	1	no	....	12	7	....	....	5	....	....	yes	....	....	yes	....	yes	....	....
17	13	10	8	2	no	1-3	12	28	....	....	7	yes	yes	yes	no	no	no	yes	yes	no	no
17	14	10	9	3	yes	....	12	45	....	....	16	yes	yes	....	....	....	....	yes	yes	yes	no
18	14	10	12	1	yes	....	12	28	....	....	25	no	no	no	no	no	no	no	yes	no	no
19	....	....	8	1	no	....	12	28	....	....	8	yes	....	....	....	....	....	....	yes	no	no
18	15	9	8	3	no	1-2	11	....	....	....	....	no	no	no	no	no	no	yes	yes	yes	no
17	14	....	16	3	yes	1-2	12	32	....	....	46	yes	yes	yes	no	no	yes	yes	yes	no	no
....	....	....	1	1	yes	1-3	12	34	....	....	....	....	....	....	....	....	yes	no	yes	....	....

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TABLE XVIII.—*Concluded.*

Incorporated villages.	Average number pupils to each teacher.					Number of non-resident pupils.					Rate of tuition per year.			
	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.	Whole school.	High school department.	Grammar department.	Primary department.	Kindergarten department.
Royal Oak	17	36	36	....	30	9	10	5	......	24	$20 00	$16 00	$10 00	....
St. Charles	21	34	46	38	34	27	5	1	......	33	20 00	10 00	10 00	$10 00
St. Clair Heights	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Saline	22	25	34	..	27	32	2	6	......	40	20 00	10 00	10 00	....
Sand Lake	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Saranac	24	38	25	....	27	48	20	8	......	76	17 50	12 50	10 00	....
Saugatuck	19	21	36	30	25	5	......	......	......	5	12 00	....	....	....
Schoolcraft	15	30	31	....	24	22	7	1	......	30	18 00	18 00	14 40	....
Sebewaing	14	41	35	....	29	10	3	1	......	14	5 00	....	....	....
Shelby	22	25	30	....	25	37	2	......	......	29	20 00	12 00	12 00	....
Shepherd	19	28	34	24	26	34	3	3	......	40	18 00	13 50	13 50	13 50
Sheridan	20	22	64	....	29	......	......	......	......	......	18 00	13 50	9 00	....
Sherman	19	24	27	29	25	1	......	......	2	3	....	....	....	....
Sherwood	29	14	33	30	26	9	2	......	1	12	10 00	10 00	....	10 00
†Sibley	....	....	....	....	....	....	....	....	......	....	....	....	....	....
South Lyon	23	38	31	....	29	32	2	......	......	34	14 00	14 00	8 50	....
†South Range	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Sparta	32	35	33	35	34	60	4	......	......	64	20 00	12 00	12 00	12 00
Spring Lake	11	24	40	....	28	2	......	......	......	2	19 00	....	....	....
Springport	20	47	34	9	26	22	7	1	1	31	20 00	....	....	....
Stambaugh	19	28	27	65	30	8	......	......	......	8	17 50	....	....	....
Stanwood	33	23	25	....	27	12	......	......	......	12	12 00	....	....	....
Stephenson	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Stevensville	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Stockbridge	35	22	46	26	29	45	3	2	......	50	20 00	12 50	10 00	7 50
Sunfield	22	38	15	....	22	29	3	......	......	32	20 00	20 00	20 00	....
Sutton's Bay	19	13	21	40	24	......	......	......	......	......	18 00	9 00	9 00	9 00
Tecumseh	23	32	31	....	28	73	8	6	......	87	20 00	16 00	12 00	....
Tekonsha	26	50	43	48	30	35	5	1	1	42	20 00	9 00	9 00	9 00
Thompsonville	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Three Oaks	19	35	44	....	33	20	3	3	......	26	18 00	11 50	9 00	....
†Tower	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Trenton	11	32	45	33	32	8	2	......	......	10	20 00	15 00	15 00	15 00
Tustin	21	23	25	33	25	27	......	......	......	27	18 00	....	....	....
Twining	29	27	36	....	31	11	......	......	......	11	....	....	....	....
Ubly	28	65	75	....	56	5	......	......	......	5	....	....	....	....
Union City	16	44	36	....	28	54	10	5	......	69	15 00	12 00	9 00	....
Unionville	25	40	30	....	32	22	......	......	......	22	20 00	....	....	....
Utica	21	33	30	....	27	19	4	......	......	23	18 00	13 00	13 00	....
Vandalia	22	32	32	....	27	10	4	3	......	17	15 00	12 00	12 00	....
Vanderbilt	10	88	38	....	36	4	......	......	......	4	10 00	....	....	....
Vassar	17	24	55	13	26	24	9	1	......	34	16 00	10 00	....	....
Vermontville	20	27	27	....	24	37	5	8	......	50	....	....	....	....
Vernon	5	24	36	30	24	2	3	2	2	9	10 00	....	....	....
Vicksburg	20	29	37	15	25	42	3	1	......	46	20 00	16 00	12 00	12 00
Wakefield	12	27	28	28	23	......	......	......	......	......	....	....	....	....
Waldron	35	20	34	31	30	46	3	......	......	49	20 00	13 50	11 25	9 00
†Walkerville	....	....	....	....	....	....	....	....	......	....	....	....	....	....
Warren	....	24	38	....	31	......	1	4	......	5	....	....	....	....
Watervliet	18	45	47	33	34	19	14	6	3	42	20 00	13 50	9 00	....
Wayland	25	40	38	45	35	......	......	......	......	......	20 00	12 00	9 00	7 00
Wayne	26	39	42	....	34	49	4	9	......	62	20 00	14 00	10 00	....
Webberville	32	13	42	26	28	10	2	1	......	13	20 00	....	....	....
†Westphalia	....	....	....	....	....	....	....	....	......	....	....	....	....	....
White Cloud	25	32	33	12	27	16	......	......	......	16	20 00	....	....	....
Whitehall	20	34	43	....	33	10	4	......	......	14	14 25	9 53	9 50	....
White Pigeon	15	23	29	10	19	23	3	......	......	26	20 00	12 00	....	....
Williamston	19	35	31	....	26	56	15	......	......	71	20 00	14 00	10 00	....
Wolverine	19	24	39	31	26	5	3	......	......	8	19 00	14 25	....	....
Woodland	42	24	27	....	31	30	1	2	......	33	....	....	....	....

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*When blank occurs item has not been reported. †District not legally graded. **Report included in Lake Linden. ‡Includes report for Calumet and Red Jacket.

TABLE XVIII.—*Concluded.*

Average age of class.								Number of pupils studying—				Does school give special instruction in—									
Graduated.	Promoted to high school.	Promoted to grammar department.	Number of graduates.	Number of U. S. flags.	Has school a kindergarten below primary grade?	Portion of time in first primary devoted to kindergarten work.	Number of grades in school	Latin.	Greek.	French.	German.	Vocal music?	Drawing?	Penmanship?	Manual training?	Domestic science?	Agriculture?	Has school a commercial course?	Is the compulsory attendance law enforced?	Has school an ungraded department?	Has school a day school for the deaf?
....	....	......	5	1	no	1-2	12	19	....	....	11	yes	yes	yes	....	....	....	yes	yes	no	no
17	13	10	8	1	yes	......	12	35	....	....	15	yes	yes	yes	no	no	no	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	11	11	1	yes	1-8	12	16	....	....	27	yes	yes	yes	no	no	no	....	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	10	8	1	no	2-9	12	27	....	....	......	no	yes	yes	yes	no	no	yes	yes	no	no
17	13	9	2	2	....	......	12	21	....	....	13	....	....	....	....	....	....	....	yes	....	....
18	14	......	5	1	....	......	12	......	....	....	......	yes	yes	....	....	....	....	....	yes	....	....
17	15	11	5	1	no	......	12	16	....	....	......	yes	yes	no	no	no	no	yes	yes	no	no
18	14	11	16	....	no	1-2	12	27	....	....	21	yes	yes	no	no	no	yes	no	yes	no	no
18	13	9	4	1	yes	1-3	12	42	....	....	6	yes	yes	no	no	no	no	no	no	no	no
17	14	10	6	1	no	......	12	17	....	....	......	no	no	no	no	no	no	no	....	no	no
....	....	......	....	1	yes	1-3	10	......	....	....	......	no	no	yes	no	no	no	yes	yes	np	no
18	15	9	6	1	no	1-3	12	......	....	....	6	no	no	no	no	no	no	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	......	4	....	no		12	37	....	....	......	no	no	no	no	no	yes	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
17	13	9	14	1	yes	......	12	12	....	....	30	yes	yes	yes	yes	....	....	yes	yes	no	no
16	14	10	7	1	no	1-2	10	9	....	....	......	no	no	no	no	no	yes	....	yes	no	no
16	14	9	7	1	no	1-4	12	5	....	....	......	no	no	no	no	no	no	no	yes	no	no
16	14	......	15	2	yes	......	12	14	....	....	10	yes	yes	no	no	no	no	no	yes	no	no
15	14	8	28	1	no	......	10	......	....	....	......	no	no	no	no	no	yes	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	9	17	1	yes	1-3	12	39	....	....	......	....	....	....	....	....	....	....	yes	....	....
18	14	9	3	1	no	......	12	6	....	....	35	no	no	no	no	no	no	no	yes	no	no
15	....	10	....	1	no	......	11	7	....	....	......	no	no	no	no	no	yes	no	yes	no	no
18	14	10	18	4	no	1-4	12	26	....	....	41	yes	yes	....	....	....	yes	yes	yes	no	no
18	14	10	10	1	yes	1-2	12	......	....	....	......	yes	yes	yes	no	no	no	yes	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
17	14	9	11	2	no	1-3	12	10	....	....	31	yes	no	no	no	no	no	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	....	......	....	1	yes	......	12	......	....	....	......	yes	yes	no	no	no	no	yes	yes	no	no
18	....	....	7	1	yes	1-3	12	16	....	....	......	....	....	yes	....	....	....	yes	yes	no	no
16	....	......	11	1	no	3-4	....	......	....	....	......	no	no	yes	no	no	no	yes	yes	no	no
17	14	......	....	1	no	......	10	......	....	....	......	....	yes	yes	....	....	....	....	yes	no	...
....	....	......	....	1	no	......	12	64	....	....	27	yes	yes	no	no	no	yes	no	yes	no	no
17	14	......	6	....	......	......	12	....	....	....	......	....	....	yes	....	....	....	....	yes	....	....
16	13	......	7	1	no	......	12	38	....	....	......	no	yes	yes	no	no	no	no	yes	no	no
17	....	......	8	1	no	......	12	13	....	....	......	no	no	no	no	no	no	no	yes	no	no
...	14	9	....	1	....	1-5	12	......	....	....	......	yes	yes	yes	no	no	no	no	yes	no	....
17	13	8	18	3	no	1-2	12	17	....	....	22	yes	yes	yes	no	no	no	no	yes	no	no
17	14	9	10	1	no	......	12	14	....	....	20	no	no	no	no	no	no	yes	yes	no	no
15	13	11	3	..	no	1-3	10	5	....	....	......	....	....	....	....	....	....	no	yes	....	....
18	14	10	10	1	yes	1-10	12	25	....	....	12	yes	yes	yes	yes	....	....	yes	yes	no	no
18	14	......	7	....	yes	......	12	31	....	....	8	yes	yes	no	yes	yes	no	no	yes	no	no
18	13	10	17	2	yes	......	12	9	....	....	......	no	no	yes	yes	no	no	yes	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
....	15	......	....	1	no	......	10	......	....	....	......	no	no	no	no	no	no	no	no	no	no
18	14	10	17	....	yes	1-2	12	......	....	....	......	no	no	no	no	no	yes	no	yes	no	no
18	....	......	4	1	no	1-2	12	35	....	....	......	yes	yes	yes	no	no	no	no	yes	no	no
18	13	10	20	1	yes	1-2	12	35	....	....	28	yes	no	no	no	no	yes	yes	yes	no	no
....	....	......	....	1	yes	1-3	11	......	....	....	......	no	no	yes	no	no	no	no	yes	no	no
....	....	......	....	....	....	......	....	......	....	....	......	....	....	....	....	....	....	....	....	....	....
18	14	10	5	1	yes	1-4	12	11	....	....	3	yes	yes	yes	yes	no	no	no	yes	no	no
17	14	9	17	1	no	1-5	12	26	....	....	24	yes	no	no	no	no	no	no	yes	....	....
17	....	......	6	1	yes	......	12	......	....	....	......	yes	yes	yes	no	no	no	no	yes	no	....
18	14	11	11	1	no	1-5	12	54	....	....	21	yes	yes	no	no	no	yes	....	yes	....	....
18	....	......	3	....	yes	......	12	8	....	....	......	no	no	yes	no	no	no	no	yes	no	no
15	14	8	18	1	no	......	10	......	....	....	......	....	....	....	....	....	....	....	yes	....	....

*TABLE XIX.

Financial statistics of city and graded village schools as

Incorporated cities.	Amount paid superintendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
Adrian	$2,200 00	$31,864 62	$7,275 00	$41,339 62	$30 53	$12 73	$43 26
Albion	1,700 00	15,692 50	3,312 00	20,704 50	33 69	9 88	43 57
Allegan	1,700 00	13,942 96	961 00	16,603 96	33 05	12 58	45 63
Alma	1,700 00	12,171 03	1,300 00	15,171 03	35 57	8 06	43 63
Alpena	1,750 00	29,370 00	1,600 00	32,720 00	42 58	14 77	57 35
Ann Arbor	2,700 00	65,046 79	6,060 00	73,806 79	56 52	12 03	68 55
Au Gres	....	....	....	....	....	....	....
Au Sable	....	898 96	....	898 96	....	....	....
Bad Axe	1,300 00	7,450 00	450 00	7,900 00	22 50	5 59	28 09
Battle Creek	2,850 00	84,670 00	7,521 40	95,042 20	35 79	7 30	43 09
Bay City	3,000 00	130,514 30	5,900 00	138,914 30	53 66	6 93	60 59
Beaverton	720 00	2,019 50	....	2,739 50	34 86	10 96	45 82
Belding	1,400 00	10,070 60	1,000 00	14,195 60	40 87	17 49	58 36
Benton Harbor	2,000 00	25,742 58	2,900 00	30,642 58	34 20	6 86	41 06
Bessemer	1,800 00	19,875 00	774 00	23,724 00	51 73	15 27	67 00
Big Rapids	1,400 00	14,983 00	800 00	17,183 00	48 59	7 86	56 45
Boyne City	....	....	....	....	....	....	....
Brown City	1,000 00	3,425 00	....	4,425 00	38 31	6 99	45 30
Cadillac	1,800 00	30,585 00	5,450 00	37,835 00	42 83	4 70	47 53
Charlevoix	1,300 00	9,607 00	540 00	11,447 00	44 78	17 42	62 20
Charlotte	1,900 00	15,250 00	1,900 00	19,050 00	34 39	5 68	40 07
Cheboygan	1,200 00	19,225 00	1,375 00	21,800 00	40 15	12 95	53 10
Clare	2,000 00	4,450 00	500 00	6,950 00	29 55	5 89	35 44
Coldwater	1,500 00	20,270 00	1,825 00	23,595 00	33 38	10 97	44 35
Coleman	....	....	....	....	....	....	....
Corunna	1,200 00	4,825 00	....	6,025 00	26 81	10 60	37 41
Croswell	1,850 00	4,158 75	....	6,008 75	33 97	9 83	43 80
Crystal Falls	2,050 00	22,591 25	3,825 00	28,466 25	63 29	30 07	93 36
Detroit	6,000 00	1,571,649 05	60,803 75	1,638,452 80	67 39	8 93	76 32
Dowagiac	1,400 00	17,141 25	1,000 00	19,541 25	34 81	10 11	44 92
East Jordan	900 00	10,681 25	570 00	12,151 25	47 38	8 19	55 57
East Lansing	900 00	1,853 75	....	2,553 75	27 38	12 48	39 86
East Tawas	950 00	5,150 00	....	6,100 00	36 00	7 50	43 50
Eaton Rapids	1,200 00	6,721 00	1,204 00	9,125 00	37 37	6 73	44 10
Escanaba	2,500 00	42,186 17	2,147 00	46,833 17	45 54	7 52	53 06
Flint	2,650 00	85,661 52	6,802 50	95,114 02	38 77	7 01	45 78
Fremont	1,150 00	7,747 54	392 25	9,209 79	27 64	6 46	34 10
Gladstone	1,600 00	14,418 25	....	16,018 25	42 35	7 29	49 64
Gladwin	....	....	....	....	....	....	....
Grand Haven	1,750 00	16,958 30	575 00	19,283 30	36 87	8 97	45 84
Grand Ledge	1,200 00	8,892 50	529 50	10,622 00	28 79	9 06	37 85
Grand Rapids	3,750 00	414,215 75	20,900 89	438,866 64	67 30	14 59	81 89
Greenville	1,700 00	12,615 00	950 00	15,265 00	37 19	10 58	47 77
Hancock	2,200 00	26,721 50	750 00	29,671 50	50 02	7 53	57 55
Harbor Beach	1,300 00	5,475 00	500 00	7,275 00	46 61	9 52	56 13
Harrison	900 00	2,112 75	....	3,012 75	32 26	10 00	42 26
Harrisville	810 00	1,350 00	....	2,160 00	24 54	2 27	26 81
Hastings	1,600 00	16,614 50	3,250 00	21,464 50	34 10	9 13	43 23
Hillsdale	1,600 00	17,505 16	2,000 00	21,105 16	31 01	7 21	38 22
Holland	2,000 00	32,081 31	3,100 00	37,181 31	35 09	14 67	49 76
Hudson	1,500 00	8,802 50	600 00	10,902 50	33 69	7 18	40 87
Ionia	1,900 00	17,475 00	1,720 00	21,095 00	42 78	17 19	59 97
Iron Mountain	2,800 00	49,400 00	1,800 00	54,000 00	39 59	5 82	45 41
Ironwood	2,500 00	43,946 00	10,800 00	57,246 00	47 96	11 21	59 17
Ishpeming	3,000 00	50,110 45	7,900 00	61,010 45	46 00	10 21	56 21

TABLE XIX.

reported by superintendents for the year 1911-1912.

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$25 42	$12 73	$38 15	$25 02	$12 73	$37 75	....	....	....	$26 52	$12 73	$39 15
15 91	9 88	25 79	15 70	9 88	25 58	....	....	....	19 79	9 88	29 67
26 76	12 58	39 34	20 09	12 58	32 67	....	....	....	25 86	12 58	38 44
20 69	8 06	28 75	17 71	8 06	25 77	$17 03	$8 06	$25 09	22 34	8 06	30 40
20 61	14 77	35 38	15 10	14 77	29 87	....	....	....	20 34	14 77	35 11
23 43	12 03	35 46	23 43	12 03	35 46	....	....	....	32 26	12 03	44 29
....	....	....	....	....	....	....	....	....	....	....	....
20 48	14 29	34 77	17 25	14 29	31 54	....	....	....	18 73	14 29	33 02
19 51	5 59	25 10	7 88	5 59	13 47	23 48	5 59	29 07	16 22	5 59	21 81
21 68	7 30	28 98	14 51	7 30	21 81	....	....	....	22 21	7 30	29 51
19 64	6 93	26 57	18 95	6 93	25 88	15 32	6 93	25 25	22 47	6 93	29 40
9 62	10 96	20 58	7 92	10 96	18 88	....	....	....	13 04	10 96	24 00
20 79	17 49	38 28	15 37	17 49	22 86	20 67	17 49	38 16	23 23	17 49	40 72
19 61	6 86	26 47	11 70	6 86	18 56	12 80	6 86	19 66	18 09	6 86	24 95
25 02	15 27	40 29	14 64	15 27	29 91	16 75	15 27	32 02	22 44	15 27	37 71
10 27	7 86	18 13	15 83	7 86	23 69	....	....	....	19 50	7 86	27 36
....	....	....	....	....	....	....	....	....	....	....	....
13 42	6 99	20 41	12 18	6 99	19 17	10 58	6 99	17 57	18 99	6 99	25 98
26 20	4 70	30 90	16 52	4 70	21 22	15 11	4 70	19 81	22 62	4 70	27 32
18 24	17 42	35 66	17 26	17 42	34 68	....	....	....	23 95	17 42	41 37
18 94	5 68	24 62	17 46	5 68	23 14	....	....	....	22 30	5 68	27 98
18 19	12 95	31 14	16 16	12 95	29 11	....	....	....	20 41	12 95	33 36
14 80	5 89	20 69	17 13	5 89	23 02	....	....	....	20 87	5 89	26 76
22 08	10 97	33 05	19 36	10 97	30 33	16 51	10 97	27 48	23 57	10 97	34 54
....	....	....	....	....	....	....	....	....	....	....	....
11 16	10 60	21 76	20 48	10 60	31 08	12 79	10 60	23 39	17 72	10 60	28 32
15 66	9 83	25 49	11 15	9 83	20 98	17 11	9 83	27 04	18 26	9 83	28 09
21 28	30 07	51 35	19 60	30 07	49 67	14 06	30 07	44 13	23 74	30 07	53 81
36 56	8 93	45 49	24 48	8 93	33 41	34 05	8 93	42 98	33 13	8 93	42 06
17 26	10 11	27 37	12 54	10 11	22 65	14 79	10 11	24 90	17 67	10 11	27 78
20 99	8 19	29 18	16 75	8 19	24 94	10 94	8 19	19 13	21 69	8 19	29 88
29 69	12 48	42 17	7 76	12 48	20 24	....	....	....	19 12	12 48	31 60
11 38	7 50	18 88	16 54	7 50	24 04	20 19	7 50	27 69	17 63	7 50	25 13
22 24	6 73	28 97	16 57	6 73	23 30	20 06	6 73	26 79	24 01	6 73	30 74
19 55	7 52	28 07	15 47	7 52	22 99	16 84	7 52	24 36	21 96	7 52	29 48
18 69	7 01	25 70	16 97	7 01	23 98	18 04	7 01	25 05	19 75	7 01	26 76
18 20	6 46	24 66	13 47	6 46	19 93	....	....	....	18 14	6 46	24 60
14 34	7 29	22 63	11 99	7 29	19 28	11 94	7 29	19 23	15 89	7 29	23 18
....	....	....	....	....	....	....	....	....	....	....	....
14 79	8 97	23 76	12 58	8 97	21 55	18 30	8 97	27 27	17 51	8 97	26 48
21 58	9 06	30 64	10 96	9 06	20 02	11 87	9 06	20 93	18 16	9 06	28 22
31 93	14 59	46 52	24 53	14 59	39 12	20 31	14 59	34 90	31 09	14 59	45 68
22 88	10 58	23 46	15 40	10 58	25 98	....	....	....	22 65	10 58	33 23
17 85	7 53	25 38	14 08	7 53	21 61	....	....	....	20 69	7 53	28 22
16 70	9 52	26 22	13 20	9 52	22 72	17 78	9 52	27 30	20 37	9 52	29 89
17 21	10 00	27 21	18 04	10 00	28 04	14 86	10 00	24 86	20 22	10 00	30 22
15 24	2 27	17 51	9 57	2 27	11 84	8 22	2 27	10 49	13 27	2 27	15 54
22 03	9 13	31 16	17 78	9 13	26 91	16 17	9 13	25 30	23 13	9 13	32 26
17 84	7 21	25 05	15 76	7 21	22 97	....	....	....	20 14	7 21	27 35
19 58	14 67	34 25	14 49	14 67	29 16	12 08	14 67	26 75	18 01	14 67	32 68
25 06	7 18	32 24	15 09	7 18	22 27	....	....	....	24 01	7 18	31 19
29 98	17 19	47 17	16 57	17 19	33 76	13 48	17 19	30 67	24 64	17 19	41 83
21 94	5 82	27 76	18 73	5 82	24 55	....	....	....	23 02	5 82	28 84
22 89	11 21	34 10	16 37	11 21	28 58	20 38	11 21	31 59	22 67	11 21	33 88
23 31	10 21	33 52	17 30	10 21	27 51	22 81	10 21	33 02	24 71	10 21	34 92

TABLE XIX.—*Continued.*

Incorporated cities.	Amount paid superintendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
Jackson	$2,500 00	$83,556 43	$8,346 50	$94,402 93	$42 69	$0 71	$43 40
Kalamazoo	3,250 30	95,144 81	25,491 64	123,344 75	48 48	8 62	57 10
Lansing	2,500 00	79,342 00	4,350 00	87,992 00	38 29	8 39	46 68
Lapeer	1,500 00	8,775 00	600 00	10,875 00	31 05	11 69	42 74
Ludington	2,000 00	27,906 28	3,094 96	33,001 24	38 93	10 72	49 65
Mackinac Island	1,100 00	1,755 00	....	2,855 00	37 50	6 22	43 72
Manistee	2,100 00	38,993 67	5,077 69	46,171 36	42 38	9 47	51 85
Manistique	1,700 00	19,100 00	1,550 00	22,350 00	46 72	14 23	60 95
Marine City	1,400 00	8,050 00	550 00	10,000 00	50 00	14 03	64 03
Marquette	3,000 00	42,112 75	5,025 00	50,137 75	54 79	18 20	72 99
Marshall	1,300 00	15,200 00	1,750 00	18,250 00	33 43	11 70	45 13
Mason	1,150 00	6,475 00	500 00	8,125 00	25 20	8 58	33 78
McBain	950 00	2,382 50	382 50	3,332 50	44 79	5 63	50 42
Menominee	2,250 00	40,503 17	3,715 00	46,468 17	47 57	12 11	59 68
Midland	1,150 00	9,128 00	1,800 00	12,078 00	33 32	6 92	40 24
Monroe	1,600 00	15,347 50	1,925 00	18,872 50	47 26	15 66	62 92
Mt. Clemens	1,850 00	20,420 00	2,500 00	24,770 00	58 54	13 29	71 83
Mt. Pleasant	1,450 00	9,404 48	2,787 56	13,642 04	41 10	18 18	59 28
Muskegon	3,000 00	83,663 00	5,350 00	92,013 00	38 45	12 41	50 86
Muskegon Heights	1,100 00	5,771 26	550 00	7,421 26	43 14	28 52	71 66
Negaunee	2,100 00	26,059 18	3,400 00	31,559 18	48 00	15 22	63 22
Niles	1,800 00	18,071 00	270 00	20,147 00	30 66	1 04	31 70
North Muskegon	....	1,050 00	....	1,050 00	....	....	....
Norway	1,800 00	20,850 25	1,235 00	23,885 25	41 59	12 79	54 38
Omer	670 62	1,325 00	....	1,995 62	27 95	3 57	31 52
Onaway	1,200 00	8,390 00	....	9,590 00	45 09	4 85	49 94
Owosso	1,900 00	27,713 00	3,300 00	32,913 00	34 74	11 52	46 26
Petoskey	2,950 00	17,280 00	2,200 00	22,430 00	39 45	13 83	53 28
Pontiac	2,400 00	43,429 12	4,500 00	50,329 12	39 90	15 36	55 26
Port Huron	2,300 00	50,826 00	3,600 00	56,726 00	38 52	10 32	48 84
Rose City	900 00	2,190 00	....	3,090 00	64 29	4 45	68 74
Saginaw	3,000 00	101,766 68	13,990 00	118,756 68	57 18	14 03	71 21
Saginaw, W. S.	2,400 00	54,092 17	4,175 00	60,667 17	44 84	11 29	56 13
St. Clair	1,300 00	7,925 00	525 00	9,750 00	44 57	8 73	53 30
St. Ignace	1,200 00	7,350 00	....	8,550 00	69 69	5 46	75 15
St. Johns	1,600 00	15,787 95	1,090 00	18,477 95	35 31	8 16	43 47
St. Joseph	1,800 00	20,577 30	1,000 00	23,377 30	61 84	9 80	71 64
St. Louis	1,500 00	8,233 00	1,200 00	10,933 00	40 13	11 63	51 76
Sandusky	1,000 00	2,493 75	....	3,493 75	37 03	4 86	41 89
Sault Ste. Marie	2,200 00	38,385 00	4,569 67	45,154 67	39 73	13 06	52 79
Scottville	950 00	3,680 50	....	4,630 50	21 43	8 75	30 18
South Haven	1,500 00	15,435 00	1,410 00	18,345 00	19 85	8 35	28 20
Standish	450 00	360 00	....	810 00	....	....	....
Stanton	1,200 00	3,960 00	550 00	5,710 00	31 84	8 74	40 58
Sturgis	1,500 00	11,915 00	511 88	13,926 88	42 81	7 79	50 60
Tawas City	1,000 00	3,250 00	....	4,250 00	38 09	7 84	45 93
Three Rivers	1,500 00	16,622 25	520 00	18,642 25	33 01	9 47	42 48
Traverse City	2,000 00	32,796 75	2,707 50	39,004 25	30 84	3 49	34 33
West Branch	1,200 00	6,733 00	....	7,933 00	42 14	3 67	45 81
Whittemore	700 00	425 00	....	1,125 00	....	....	....
Wyandotte	1,800 00	16,000 00	5,511 68	23,311 68	42 37	24 60	66 97
Yale	1,200 00	5,316 50	....	6,516 50	25 44	11 42	36 86
Ypsilanti	2,000 00	18,557 00	2,590 00	23,565 00	36 89	11 76	48 65
Zeeland	1,200 00	8,400 00	600 00	10,200 00	47 06	6 35	53 41

TABLE XIX.—*Continued.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$23 59	$0 71	$24 30	$18 13	$0 71	$18 84	....	....	....	$22 76	$0 71	$23 47
24 48	8 62	33 10	15 46	8 62	24 08	$16 40	$8 62	$25 02	23 23	8 62	31 85
19 86	8 39	28 25	16 36	8 39	24 75	17 52	8 39	25 91	20 35	8 39	28 74
15 13	11 69	26 82	14 45	11 69	26 14	....	....	....	19 56	11 69	31 25
25 16	10 72	35 88	15 94	10 72	26 66	16 13	10 72	26 85	21 21	10 72	31 93
17 77	6 22	23 99	8 76	6 22	14 98	....	....	....	18 91	6 22	25 13
26 01	9 47	33 48	21 21	9 47	30 68	18 10	9 47	27 57	25 94	9 47	35 41
26 67	14 23	40 90	18 56	14 23	32 79	23 91	14 23	38 14	26 23	14 23	40 46
17 05	14 03	31 08	15 47	14 03	29 50	22 75	14 03	36 78	20 57	14 03	34 60
31 12	18 20	49 32	23 43	18 20	41 63	27 11	18 20	45 31	31 06	18 20	49 26
19 64	11 70	31 34	29 16	11 70	40 86	....	....	....	27 44	11 70	39 14
20 13	8 58	28 71	18 03	8 58	26 61	....	....	....	20 94	8 58	29 52
13 78	5 63	19 41	12 18	5 63	17 81	14 19	5 63	19 82	17 09	5 63	22 72
19 81	12 11	31 92	17 25	12 11	29 46	16 14	12 11	28 25	21 93	12 11	34 04
17 02	6 92	23 94	11 94	6 92	18 86	....	....	....	18 03	6 92	24 95
18 29	15 66	33 95	16 82	15 66	32 48	24 26	15 66	39 92	23 07	15 66	38 73
16 87	13 29	30 16	20 54	13 29	33 83	26 35	13 29	39 64	25 69	13 29	38 98
23 33	18 18	41 51	18 99	18 18	37 17	13 81	18 18	31 99	27 56	18 18	45 74
20 19	13 41	32 60	19 07	12 41	31 48	23 69	12 41	36 10	23 44	12 41	35 85
19 14	28 52	47 66	18 68	28 52	47 20	11 09	28 52	39 61	20 55	28 52	49 07
24 98	15 22	40 20	14 19	15 22	29 41	18 97	15 22	34 19	22 04	15 22	37 26
26 41	1 04	27 45	13 56	1 04	14 60	....	....	....	21 09	1 04	22 13
27 27	16 79	44 06	12 50	16 79	29 29	....	....	....	18 10	16 79	34 89
15 26	12 79	28 05	14 79	12 79	27 58	....	....	....	18 12	12 79	30 91
9 69	3 57	13 26	12 50	3 57	16 07	13 33	3 57	16 90	14 25	3 57	17 82
16 16	4 85	21 01	12 42	4 85	17 27	7 87	4 85	12 72	16 12	4 85	20 97
19 25	11 52	30 77	19 53	11 52	31 05	16 96	11 52	28 48	21 57	11 52	33 09
20 92	13 83	34 75	22 86	13 83	36 69	....	....	....	24 09	13 83	37 92
20 65	15 36	36 01	14 40	15 36	29 76	24 43	15 36	39 79	20 07	15 36	35 43
22 21	10 32	32 53	14 56	10 32	24 88	....	....	....	19 90	10 32	30 22
16 36	4 45	20 81	9 69	4 45	14 14	....	....	....	15 20	4 45	19 74
30 45	14 03	44 48	18 18	14 03	32 21	....	....	....	29 45	14 03	43 48
21 65	11 29	32 94	17 92	11 29	29 21	....	....	....	22 60	11 29	33 89
19 31	8 73	28 04	18 61	8 73	27 34	22 83	8 73	31 56	24 25	8 73	32 98
28 80	5 46	34 26	17 00	5 46	22 46	....	....	....	25 59	5 46	31 05
22 80	8 16	30 96	22 35	8 16	30 51	27 93	8 16	36 00	26 74	8 16	34 90
23 06	9 80	32 86	14 28	9 80	24 08	17 16	9 80	26 96	25 16	9 80	34 96
18 89	11 63	30 52	16 90	11 63	28 53	....	....	....	23 41	11 63	35 04
7 24	4 86	12 10	10 07	4 86	14 93	....	....	....	12 84	4 86	17 70
21 73	13 06	34 79	16 94	13 06	30 00	7 14	13 06	20 20	20 35	13 06	33 41
11 49	8 75	20 24	12 35	8 75	21 10	20 85	8 75	29 60	15 38	8 75	24 13
23 95	8 35	32 30	21 69	8 35	30 04	....	....	....	21 96	8 35	30 31
18 75	4 53	23 28	6 92	4 53	11 45	....	....	....	10 66	4 53	15 19
16 19	8 74	24 93	13 94	8 74	22 68	18 85	8 74	27 59	20 39	8 74	29 13
14 19	7 79	21 98	18 16	7 79	25 95	10 64	7 79	18 43	19 26	7 79	27 05
13 18	7 84	21 02	13 68	7 84	21 52	....	....	....	17 78	7 84	25 62
14 59	9 47	24 06	16 47	9 47	25 94	18 95	9 47	28 42	20 53	9 47	30 00
21 34	3 49	24 83	15 54	3 49	19 03	19 10	3 40	22 50	20 48	3 40	23 97
15 19	3 67	18 86	8 56	3 67	12 23	12 50	3 67	16 17	18 03	3 67	21 70
17 50	4 53	22 03	8 67	4 53	13 20	....	....	....	12 64	4 53	17 17
27 56	24 60	52 16	21 02	24 60	45 62	....	....	....	25 62	24 60	50 22
17 60	11 42	29 02	13 44	11 42	24 86	22 23	11 42	33 65	18 36	11 42	29 78
23 47	11 76	35 23	20 78	11 76	32 54	....	....	....	26 04	11 76	37 80
13 29	6 35	19 64	13 47	6 35	19 82	17 19	6 35	23 54	19 25	6 35	25 60

TABLE XIX.—*Continued.*

Incorporated villages.	Amount paid super-intendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
Addison	$875 00	$2,322 00		$3,197 00	$29 28	$11 35	$40 63
**Ahmeek							
Akron	750 00	1,250 00		2,000 00	31 25	8 50	39 75
Alanson	810 00	1,755 00		2,565 00	50 71	4 72	55 43
Algonac	1,200 00	4,590 00	$450 00	6,240 00	51 25	11 17	62 42
Almont	1,100 00	3,300 00	275 00	4,675 00	40 88	6 59	47 47
Applegate	540 00	288 00		828 00			
Armada	1,100 00	2,518 50		3,618 50	42 45	9 13	51 58
Ashley	625 00	1,725 00		2,350 00	44 79	6 28	51 07
Athens	900 00	2,339 90		3,239 90	16 58	18 85	35 43
**Atlanta							
Augusta	800 00	2,903 75	125 40	3,829 15	39 37	12 00	51 37
Baldwin	775 00	1,305 00		2,080 00	40 79	5 31	46 10
Bancroft	900 00	1,795 00		2,695 00	50 00	14 11	64 11
Bangor	1,200 00	3,598 00		5,798 00	24 37	11 04	35 41
Baraga							
Baroda	720 00	1,560 00		2,280 00	38 62	6 28	44 90
Barryton	850 00	1,397 50		2,247 50	24 29	6 65	30 94
Bear Lake	900 00	1,960 00		2,860 00	25 36	8 36	33 72
Bellaire	1,050 00	4,194 09		5,244 09	43 08	6 80	49 88
Belleville	900 00	1,950 00		2,850 00	46 29	5 35	51 64
Bellevue	1,200 00	4,050 00	550 00	5,800 00	53 84	8 11	61 95
Benzonia	900 00	2,385 00		3,285 00	42 37	8 85	51 22
Berrien Springs	1,100 00	2,385 00	217 50	3,702 50	35 61	23 39	59 00
Birmingham	1,000 00	7,486 75	500 00	8,986 75	41 61	9 50	51 11
Blissfield, No. 1 fr	533 33	1,600 00		2,133 33			
Blissfield, No. 2 fr	1,200 00	3,550 00	550 00	5,300 00	26 89	6 04	32 93
Bloomingdale	675 00	2,160 00		2,835 00	21 80	6 15	27 95
Boardman	750 00	1,260 00		2,010 00	35 71	2 88	38 59
Boyne Falls	624 75	990 00		1,614 75	26 03	8 50	34 53
Breckenridge	800 00	1,850 00	450 00	3,100 00	23 33	7 41	30 74
Breedsville	675 00	765 00		1,440 00	29 35	8 26	37 61
Brighton	950 00	2,650 00		3,600 00	24 60	14 67	39 27
Britton	720 00	1,215 00		1,935 00	45 00	4 83	49 83
Bronson	1,000 00	3,990 00		4,990 00	29 45	7 47	36 92
Brooklyn	950 00	2,967 50		3,917 50	37 22	5 34	42 56
Buchanan	1,300 00	6,915 00	175 00	8,390 00	63 36	9 56	72 92
Buckley							
Burlington	500 00	720 00		1,220 00	14 71	8 79	23 50
Burr Oak	1,000 00	3,195 00		4,195 00	22 53	13 26	35 79
Byron	800 00	1,300 00		2,100 00	26 66	7 04	33 70
Caledonia	850 00	2,100 00		2,950 00	33 75	9 96	43 71
Camden	900 00	2,025 00		2,925 00	35 29	4 33	39 62
Capac	1,000 00	2,000 00		3,000 00	23 63	5 34	28 97
Carleton	800 00	1,300 00		2,100 00	18 18	5 55	23 73
Caro	1,200 00	9,150 00	700 00	11,050 00	32 15	7 82	39 97
Carson City							
Carsonville	800 00	1,550 00		2,350 00	42 22	3 81	46 03
Caseville	750 00	1,270 00		2,020 00	23 91	5 83	29 74
Casnovia	800 00	1,845 00		2,645 00	31 82	7 89	39 71
Cass City	1,075 00	5,700 00		6,775 00	24 40	8 55	32 95
Cassopolis	1,200 00	4,052 50		5,252 50	33 16	6 96	40 12
Cedar Springs	1,100 00	3,497 50	500 00	5,097 50	31 85	6 28	38 13
Central Lake	1,134 87	3,711 82	259 06	5,105 75	36 94	5 21	42 15
Centreville	1,050 00	3,856 00	266 00	5,172 00	51 35	2 89	54 24

TABLE XIX.—*Continued.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$13 09	$11 35	$25 44	$10 89	$11 35	$22 24	$17 08	$11 35	$28 43	$18 77	$11 35	$30 12
....	....	....	....	....	....	....	....	....	....	....	....
11 76	8 50	20 26	8 18	8 50	16 68	8 88	8 50	17 38	12 66	8 50	21 16
15 83	4 72	20 55	10 65	4 72	15 37	....	....	....	16 13	4 72	20 85
24 08	11 17	35 25	14 63	11 17	25 80	25 00	11 17	36 17	23 03	11 17	34 20
19 29	6 59	25 88	16 12	6 59	22 71	....	....	....	23 14	6 59	29 73
16 88	4 70	21 58	12 00	4 70	16 70	....	....	....	14 78	4 70	19 48
7 48	9 13	16 61	11 62	9 13	20 75	....	....	....	18 55	9 13	27 68
12 50	6 28	18 78	8 50	6 28	14 78	6 67	6 28	12 95	13 83	6 28	20 11
12 49	18 85	31 34	4 19	18 85	23 04	....	....	....	11 13	18 85	29 98
....	....	....	....	....	....	....	....	....	....	....	....
23 88	12 00	35 88	15 34	12 00	27 34	....	....	....	26 41	12 00	38 41
20 24	5 31	25 55	13 87	5 31	19 18	14 25	5 31	19 56	20 19	5 31	25 50
14 14	14 11	28 25	10 53	14 11	24 64	10 26	14 11	24 37	19 25	14 11	33 36
13 21	11 04	24 25	14 52	11 04	25 56	....	....	....	17 05	11 04	28 09
....	....	....	....	....	....	....	....	....	....	....	....
12 57	6 28	18 85	12 00	6 28	18 28	11 63	6 28	17 91	18 24	6 28	24 52
15 73	6 65	22 38	20 11	6 65	26 76	11 11	6 65	17 76	17 83	6 65	24 48
25 39	8 36	33 75	9 69	8 36	18 05	....	....	....	20 00	8 36	28 36
15 84	6 80	22 64	8 77	6 80	15 57	33 75	6 80	40 55	17 71	6 80	24 51
15 38	5 35	20 73	11 94	5 35	17 29	....	....	....	19 52	5 35	24 87
26 29	8 11	35 40	15 06	8 11	23 17	....	....	....	28 29	8 11	36 40
12 11	8 85	20 96	6 90	8 85	15 75	....	....	....	14 47	8 85	23 32
18 73	23 39	42 12	18 19	23 39	41 58	....	....	....	23 73	23 39	47 12
16 49	9 50	25 99	13 44	9 50	22 94	....	....	....	19 88	9 50	29 38
19 92	3 89	23 81	14 70	3 89	18 59	....	....	....	18 39	3 89	22 28
20 68	6 04	26 72	12 54	6 04	18 58	....	....	....	20 00	6 04	26 04
13 87	6 15	20 02	14 83	6 15	20 98	11 33	6 15	17 48	17 18	6 15	23 33
10 66	2 88	13 54	7 94	2 88	10 82	15 00	2 88	17 88	14 36	2 88	17 24
14 56	8 50	23 06	10 10	8 50	18 60	....	....	....	15 09	8 50	23 59
15 85	7 41	23 26	11 11	7 41	18 52	11 00	7 41	18 41	15 82	7 41	23 23
14 71	8 26	22 97	13 66	8 26	21 92	....	....	....	18 70	8 26	26 96
18 52	14 67	33 19	17 21	14 67	31 88	....	....	....	20 23	14 67	34 90
15 00	4 83	19 83	11 25	4 83	16 08	....	....	....	21 99	4 83	26 82
25 75	7 47	33 22	14 30	7 47	21 77	....	....	....	22 48	7 47	29 95
14 13	5 34	19 47	19 02	5 34	24 36	....	....	....	24 48	5 34	29 82
17 76	9 56	27 32	15 12	9 56	24 68	....	....	....	25 50	9 56	35 06
....	....	....	....	....	....	....	....	....	....	....	....
15 65	8 79	24 44	15 65	8 79	24 44	....	....	....	15 25	8 79	24 04
22 18	13 26	35 44	13 58	13 26	26 84	37 19	13 26	50 45	20 66	13 26	33 92
16 00	7 04	23 04	16 66	7 04	23 70	14 29	7 04	21 33	18 42	7 04	25 46
27 08	9 96	37 04	15 00	9 96	24 96	20 00	9 96	29 96	24 79	9 96	34 75
13 85	4 33	18 18	21 18	4 33	25 51	12 65	4 33	16 98	23 21	4 33	27 54
16 66	5 34	22 00	11 58	5 34	16 92	....	....	....	16 13	5 34	21 47
10 55	5 55	16 10	16 50	5 55	22 05	....	....	....	15 11	5 55	20 66
15 97	7 82	23 79	13 42	7 82	21 24	8 75	7 82	16 57	18 26	7 82	26 08
....	....	....	....	....	....	....	....	....	....	....	....
18 33	3 81	22 14	11 90	3 81	15 71	12 82	3 81	16 63	18 08	3 81	21 89
11 36	5 83	17 19	7 37	5 83	13 20	....	....	....	13 74	5 83	19 57
17 15	7 89	25 04	23 75	7 89	31 64	95 00	7 89	102 89	25 19	7 89	33 08
20 75	8 55	29 30	10 60	8 55	19 15	....	....	....	17 73	8 55	26 28
14 97	6 96	21 93	14 07	6 96	21 03	....	....	....	20 12	6 96	27 08
17 42	6 28	23 70	12 76	6 28	19 04	28 52	6 28	34 80	20 31	6 28	26 59
21 74	5 21	26 95	14 34	5 21	19 55	25 67	5 21	30 88	22 69	5 21	27 90
20 31	2 89	23 20	20 52	2 89	23 41	....	....	....	29 89	2 89	32 78

TABLE XIX.—*Continued.*

Incorporated villages.	Amount paid superintendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
Chelsea	$1,400 00	$5,262 50	$488 75	$8,151 25	$28 44	$0 99	$29 43
Chesaning	1,200 00	4,450 00	300 00	5,950 00	45 39	7 44	52 83
Clarkston	900 00	1,590 00	......	2,490 00	23 84	8 77	32 61
Clayton	720 00	1,181 25	......	1,901 25	21 81	13 97	35 78
Clifford	......	......	......	......	......	......	......
Climax	765 00	1,800 00	......	2,565 00	36 00	6 42	42 42
Clinton	1,100 00	3,828 00	......	4,928 00	29 81	11 85	41 66
Clio	......	......	......	......	......	......	......
Coloma	......	......	......	......	......	......	......
Colon	1,000 00	2,700 00	540 00	4,240 00	34 59	8 73	43 32
Columbiaville	......	......	......	......	......	......	......
Concord	750 00	1,745 00	250 00	2,745 00	25 99	8 66	34 65
Constantine	1,100 00	3,800 00	500 00	5,400 00	28 00	3 61	31 61
Coopersville	950 00	3,491 25	......	4,441 25	29 85	7 18	37 03
Copemish	585 00	855 00	......	1,440 00	13 51	9 08	22 59
Custer	750 00	450 00	......	1,200 00	......	......	......
**Daggett	......	......	......	......	......	......	......
Dansville	750 00	1,350 00	......	2,100 00	47 83	5 90	53 73
Davison	900 00	1,800 00	......	2,700 00	38 04	5 62	43 66
Dearborn	......	......	......	......	......	......	......
Decatur	1,100 00	5,017 89	......	6,117 89	31 36	6 38	37 74
Deckerville	1,000 00	2,100 00	......	3,100 00	22 66	7 27	29 93
Deerfield	810 00	1,665 00	......	2,475 00	24 17	1 35	25 52
Detour	850 00	1,675 00	......	2,525 00	28 33	16 01	44 34
Dexter	1,000 00	3,700 00	250 00	4,950 00	34 21	4 12	38 33
Dimondale	760 00	1,550 00	......	2,310 00	36 18	18 53	54 71
Douglas	720 00	1,710 00	......	2,430 00	40 66	4 84	45 50
Dryden	750 00	1,400 00	......	2,150 00	22 32	5 97	28 29
Dundee	900 00	3,127 50	......	4,027 50	32 55	5 82	38 37
Durand	1,200 00	7,123 00	362 00	8,685 00	38 21	8 40	46 61
**Eagle	......	......	......	......	......	......	......
East Grand Rapids	......	2,172 50	200 00	2,372 50	30 43	12 59	43 02
**East Lake	......	......	......	......	......	......	......
Eau Claire	......	......	......	......	......	......	......
Ecorse	450 00	2,737 50	550 00	3,737 50	61 11	18 76	79 87
Edmore	1,100 00	2,250 75	......	3,350 75	29 69	3 03	32 72
Edwardsburg	......	......	......	......	......	......	......
Elberta	800 00	2,300 00	450 00	3,550 00	58 82	10 54	69 36
Elk Rapids	1,400 00	6,978 33	475 00	8,853 33	21 05	8 58	29 63
Elkton	1,100 00	3,030 00	......	4,130 00	36 05	9 06	45 11
Elsie	1,000 00	3,077 50	......	4,077 50	34 75	3 75	38 50
**Emmet	......	......	......	......	......	......	......
Empire	900 00	2,070 00	......	2,970 00	28 41	7 81	36 22
Essexville	900 00	1,800 00	550 00	3,250 00	......	......	......
Evart	1,300 00	5,500 00	......	6,800 00	32 71	4 45	37 16
Fairgrove	750 00	1,600 00	......	2,350 00	42 57	1 83	44 40
Farmington	775 00	1,800 00	......	2,575 00	30 36	4 68	35 04
Farwell	855 00	1,980 00	......	2,835 00	50 40	3 22	53 62
Fennville	900 00	2,160 00	......	3,060 00	25 47	3 12	28 59
Fenton	1,300 00	9,100 00	......	10,400 00	26 95	7 82	34 77
Fife Lake	702 00	954 00	......	1,656 00	17 55	3 88	21 43
Flushing	1,200 00	2,775 00	400 00	4,375 00	23 21	1 60	24 81
Ford	......	......	......	......	......	......	......
Forestville	542 50	380 00	......	922 50	......	......	......
Fowler	......	......	......	......	......	......	......

TABLE XIX.—*Continued.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$20 21	$0 99	$21 20	$17 10	$0 99	$18 09	......	......	......	$21 68	$0 99	$22 67
17 50	7 44	24 94	13 23	7 44	20 67	$19 23	$7 44	$26 67	22 89	7 44	30 33
30 00	8 77	38 77	11 43	8 77	20 20	9 52	8 77	18 29	17 27	8 77	26 04
26 76	13 97	40 73	16 87	13 97	30 84	......	......	......	22 11	13 97	36 08
......	......	......	......	......	......	......	......	......	......	......	......
16 07	6 42	22 49	14 06	6 42	20 48	12 27	6 42	18 69	20 04	6 42	26 46
17 47	11 85	29 32	26 38	11 85	38 23	......	......	......	24 27	11 85	36 12
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
13 02	8 73	21 75	18 32	8 73	27 05	......	......	......	20 58	8 73	29 31
......	......	......	......	......	......	......	......	......	......	......	......
20 92	8 66	29 58	20 43	8 66	29 49	......	......	......	22 32	8 66	30 98
17 61	3 61	21 22	17 98	3 61	21 59	......	......	......	20 77	3 61	24 38
12 06	7 18	19 24	11 90	7 18	19 08	......	......	......	17 35	7 18	34 53
16 17	9 08	25 25	9 89	9 08	18 97	......	......	......	12 74	9 08	21 82
37 50	7 62	45 12	11 02	7 62	18 64	......	......	......	20 00	7 62	27 62
......	......	......	......	......	......	......	......	......	......	......	......
19 64	5 90	25 54	15 71	5 90	21 61	......	......	......	24 42	5 90	30 32
9 09	5 62	14 71	8 82	5 62	14 44	......	......	......	17 76	5 62	23 38
......	......	......	......	......	......	......	......	......	......	......	......
15 20	6 38	21 58	10 82	6 38	17 20	......	......	......	16 67	6 38	23 05
11 00	7 27	18 27	10 78	7 27	18 05	6 87	7 27	14 14	12 65	7 27	19 92
12 64	1 35	13 99	11 62	1 35	12 97	......	......	......	15 66	1 35	17 01
11 87	16 01	27 88	10 26	16 01	26 27	15 09	16 01	31 10	15 59	16 01	31 60
16 43	4 12	20 55	18 22	4 12	22 34	......	......	......	24 03	4 12	28 15
15 91	18 53	34 44	24 40	18 53	42 93	......	......	......	24 07	18 53	42 50
15 78	4 84	20 62	13 50	4 84	18 34	......	......	......	21 80	4 84	26 64
15 18	5 97	21 15	16 96	5 97	22 93	......	......	......	19 11	5 97	25 08
12 78	5 82	18 60	9 89	5 82	15 71	17 15	5 82	22 97	16 85	5 82	22 67
17 73	8 40	26 13	10 15	8 40	18 55	11 00	8 40	19 40	15 90	8 40	24 30
......	......	......	......	......	......	......	......	......	......	......	......
12 50	12 59	25 09	20 44	12 59	33 03	21 74	12 59	34 33	19 45	12 59	32 04
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
13 96	18 76	32 72	11 99	18 76	30 75	9 83	18 76	28 59	13 68	18 76	32 44
11 60	3 03	14 63	9 90	3 03	12 93	......	......	......	14 82	3 03	17 85
......	......	......	......	......	......	......	......	......	......	......	......
15 94	10 54	26 48	17 07	10 54	27 61	13 39	10 54	23 93	19 39	10 54	29 93
20 56	8 58	29 14	25 23	8 58	33 81	......	......	......	23 48	8 58	32 06
22 61	9 06	31 67	12 94	9 06	22 00	......	......	......	19 86	9 06	28 92
15 66	3 75	19 41	13 45	3 75	17 20	......	......	......	20 80	3 75	24 55
......	......	......	......	......	......	......	......	......	......	......	......
14 33	7 81	22 14	11 78	7 81	19 59	10 00	7 81	17 81	15 63	7 81	23 44
43 85	19 86	63 71	18 98	19 86	38 84	......	......	......	27 31	19 86	37 17
13 48	4 45	17 93	8 56	4 45	13 01	20 37	4 45	24 82	16 83	4 45	21 28
12 16	1 83	13 99	10 26	1 83	12 09	9 72	1 83	11 55	16 91	1 83	18 74
10 79	4 68	15 47	10 57	4 68	15 25	......	......	......	15 70	4 68	20 38
14 48	3 22	17 70	10 28	3 22	13 50	......	......	......	18 41	3 22	21 63
14 06	3 12	17 18	10 52	3 12	13 64	......	......	......	15 77	3 12	18 89
15 80	7 82	23 71	22 22	7 82	30 04	......	......	......	21 62	7 82	29 44
11 63	3 88	15 51	15 90	3 88	19 78	......	......	......	14 92	3 88	18 80
13 72	1 60	15 32	10 65	1 60	12 25	......	......	......	15 19	1 60	16 79
......	......	......	......	......	......	......	......	......	......	......	......
15 95	4 64	20 59	6 78	4 64	11 42	......	......	......	10 25	4 64	14 89
......	......	......	......	......	......	......	......	......	......	......	......

TABLE XIX.—*Continued.*

Incorporated villages.	Amount paid super-intendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruc-tion.	Incident-als.	Total.
Fowlerville	$1,100 00	$3,500 00	$250 00	$4,850 00	$31 44	$11 01	$42 45
Frankenmuth							
Frankfort	1,300 00	6,775 00	775 00	8,750 00	38 97	7 84	46 81
Fraser							
Freeport	765 00	1,835 00		2,600 00	46 89	3 08	49 97
Fruitport	750 00	1,000 00		1,750 00	34 09	6 37	40 46
Gagetown	750 00	1,200 00		1,950 00	60 00	10 77	70 77
Gaines	800 00	1,192 50		1,992 50	36 36	6 22	42 58
Galesburg	1,000 00	2,722 50	487 00	4,209 50	50 64	6 05	56 69
Galien	800 00	1,395 00		2,195 00	32 21	5 07	37 28
Garden	1,350 00	6,390 00		7,740 00	45 07	8 54	53 61
Gaylord							
Gobleville	900 00	2,054 00		2,954 00	18 84	6 78	25 62
Grandville	900 00	4,175 00		5,075 00	41 28	15 06	56 34
Grant							
Grass Lake							
Grayling	1,175 00	5,269 50	475 00	6,919 50	32 89	7 75	40 64
Grosse Pointe							
Grosse Pointe Farms							
Grosse Pointe Park							
Grosse Pointe Shores	1,000 00	2,780 00		3,780 00			
Hamtramck	1,400 00	8,540 00	600 00	10,540 00			
Hanover	675 00	1,732 50		2,407 50	33 75	2 85	36 60
Harbor Springs	1,500 00	7,787 70	1,225 00	10,512 70	43 42	8 29	51 71
Harrietta	675 00	1,350 00		2,025 00	25 96	7 22	33 18
Hart	1,600 00	8,217 50	380 00	10,197 50	40 70	13 16	53 86
Hartford	1,100 00	3,940 00	450 00	5,490 00	28 63	7 00	35 63
Hersey							
Hesperia	900 00	1,530 00		2,430 00	39 42	4 58	44 00
Highland Park	2,000 00	24,550 10	2,223 75	28,773 85	79 05	18 66	97 71
Hillman							
**Hilltop							
Holly	1,050 00	3,950 00	550 00	5,500 00	25 69	5 34	31 03
Homer	1,000 00	4,125 00	350 00	5,475 00	39 39	7 73	47 12
Houghton							
Howard City	1,100 00	3,872 50	102 00	5,074 50	27 79	5 14	32 93
Howell	1,400 00	9,713 50	500 00	11,613 50	41 32	7 73	49 05
Hubbardston	630 00	1,305 00		1,935 00	46 96	8 58	55 54
†Hubbell							
Imlay City							
Iron River	1,700 00	13,102 65	1,215 00	16,017 65	44 15	23 55	67 70
Ithaca	1,200 00	7,600 00	1,100 00	9,900 00	27 55	13 80	41 35
Jonesville	1,075 00	4,050 00	450 00	5,575 00	27 47	5 57	33 04
Kalkaska	1,500 00	4,175 00	300 00	5,975 00	32 90	5 24	38 14
Kent City	1,000 00	2,002 00		3,002 00	24 23	5 03	29 26
Kinde	800 00	1,750 00		2,550 00	23 53	4 49	28 02
Kingsley	900 00	1,710 00		2,610 00	36 00	3 19	39 19
Kingston							
Laingsburg	900 00	1,950 00		2,850 00	45 69	6 44	52 13
Lake Ann	360 00	360 00		720 00	13 60	3 38	16 98
Lake City	950 00	3,107 00	450 00	4,507 00	21 61	5 75	27 36
Lake Linden	2,000 00	18,235 14	1,361 61	21,596 75	75 45	24 09	99 54
Lake Odessa	1,100 00	4,552 25	570 00	6,222 25	27 09	4 41	31 50
Lakeview	900 00	3,852 50		4,752 50	25 84	5 46	31 30
L'Anse	1,500 00	8,650 00		10,150 00	79 31	6 85	86 16

TABLE XIX.—*Continued.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$23 50	$11 01	$34 51	$16 90	$11 01	$27 91	$26 66	$11 01	$37 67	$24 01	$11 01	$35 01
....	....	....	....	....	....	....	....	....	....	....	....
17 24	7 84	25 08	15 26	7 84	23 10	17 50	7 84	25 34	19 75	7 84	27 59
....	....	....	....	....	....	....	....	....	....	....	....
14 84	3 08	17 92	16 87	3 08	19 95	9 23	3 08	12 31	20 96	3 08	24 04
16 13	6 37	22 50	10 20	6 37	16 57	....	....	....	17 15	6 37	23 52
18 18	10 77	28 95	65 22	10 77	75 99	....	....	....	22 16	10 77	32 93
15 50	6 22	21 72	14 29	6 22	20 51	....	....	....	19 73	6 22	25 95
21 89	6 05	27 94	13 41	6 05	19 46	....	....	....	24 19	6 05	30 24
13 83	5 07	18 90	10 98	5 07	16 05	....	....	....	17 90	5 07	23 06
21 03	8 54	29 57	17 38	8 54	25 92	20 83	8 54	29 37	25 23	8 54	33 77
....	....	....	....	....	....	....	....	....	....	....	....
12 79	6 78	19 57	7 65	6 78	14 43	....	....	....	13 07	6 78	19 85
13 41	15 06	28 47	15 06	15 06	30 12	26 32	15 06	41 38	19 51	15 06	34 57
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
18 47	7 75	26 22	9 68	7 75	17 43	....	....	....	15 98	7 75	23 73
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
27 92	18 77	46 69	16 63	18 77	35 40	....	....	....	21 60	18 77	40 37
27 98	11 77	39 75	14 08	11 77	25 85	16 28	11 77	28 06	17 31	11 77	29 08
20 90	2 85	23 75	10 69	2 85	13 54	....	....	....	16 95	2 85	19 80
18 47	8 29	26 76	18 32	8 29	26 61	30 55	8 29	39 84	23 21	8 29	31 50
18 00	7 22	25 22	7 76	7 22	14 98	16 31	7 22	23 53	15 00	7 22	22 22
17 32	13 16	30 48	13 28	13 16	26 44	20 21	13 16	33 37	22 03	13 16	35 19
12 18	7 00	19 18	11 96	7 00	18 96	....	....	....	15 91	7 00	22 91
....	....	....	....	....	....	....	....	....	....	....	....
13 51	4 58	18 09	12 35	4 58	16 93	10 45	4 58	15 03	18 13	4 58	22 71
32 79	18 66	51 45	17 62	18 66	36 28	20 93	18 66	39 59	27 12	18 66	45 78
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
15 85	5 34	21 19	16 12	5 34	21 46	....	....	....	18 77	5 34	24 11
29 00	7 73	36 73	11 87	7 73	19 60	....	....	....	23 20	7 73	30 93
....	....	....	....	....	....	....	....	....	....	....	....
22 47	5 14	27 61	13 55	5 14	18 69	....	....	....	19 22	5 14	24 36
8 49	7 73	16 22	20 64	7 73	28 37	....	....	....	22 68	7 73	30 41
16 88	8 58	25 46	19 57	8 58	28 15	....	....	....	27 64	8 58	36 22
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
22 75	23 55	46 30	18 93	23 55	42 48	28 13	23 55	51 68	24 76	23 55	48 31
18 81	13 80	32 61	15 21	13 80	29 01	14 48	13 80	28 28	20 00	13 80	33 80
16 32	5 57	21 89	14 43	5 57	20 00	....	....	....	18 96	5 57	24 53
20 85	5 24	26 09	18 89	5 24	24 13	21 43	5 24	26 67	23 16	5 24	28 40
20 00	5 03	25 03	11 43	5 03	16 46	....	....	....	17 98	5 03	23 01
14 04	4 49	18 53	16 10	4 49	20 59	....	....	....	17 00	4 49	21 49
16 07	3 19	19 26	11 41	3 19	14 60	....	....	....	17 17	3 19	20 36
25 00	6 44	31 44	12 88	6 44	19 32	18 52	6 44	24 96	25 22	6 44	31 66
....	....	....	10 29	3 38	13 67	....	....	....	12 00	3 38	15 38
16 06	5 75	21 81	11 65	5 75	17 40	....	....	....	15 70	5 75	21 45
32 43	24 09	56 52	27 83	21 09	51 92	....	....	....	38 29	24 09	62 38
22 28	4 41	26 69	13 16	4 41	17 57	....	....	....	20 00	4 41	24 41
16 78	5 46	22 24	9 06	5 46	14 52	13 33	5 46	18 79	17 54	5 46	23 00
29 10	6 85	35 95	17 49	6 85	24 34	17 86	6 85	24 71	25 44	6 85	32 29

TABLE XIX.—*Continued.*

Incorporated villages.	Amount paid super-intendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
‡Laurium	$3,500 00	$142,401 69	$2,083 33	$147,985 02	$42 63	$8 98	$51 61
Lawrence	1,000 00	2,565 00	450 00	4,015 00	30 31	8 28	38 59
Lawton	1,100 00	2,914 50	......	4,014 50	30 17	1 58	31 75
Leonard	650 00	850 00	......	1,500 00	32 50	6 19	38 69
Le Roy	720 00	1,620 00	......	2,340 00	29 72	4 21	33 93
Leslie	1,200 00	3,500 00	500 00	5,200 00	29 44	7 27	36 71
Lexington	900 00	2,075 00	......	2,975 00	68 75	7 49	76 24
**Lincoln	......	860 00	......	860 00	......	......	......
Linden	850 00	2,275 00	......	3,125 00	33 65	5 45	39 10
Lisbon	630 00	450 00	......	1,080 00	23 33	9 66	32 99
Litchfield	1,000 00	2,120 00	......	3,120 00	37 39	5 30	42 69
Lowell	1,200 00	6,550 00	300 00	8,050 00	20 25	6 98	27 23
Luther	800 00	1,710 00	190 00	2,700 00	23 23	3 43	26 66
Lyons	765 00	1,732 50	......	2,497 50	40 64	5 09	45 73
Mackinaw City	700 00	1,700 00	......	2,400 00	38 88	8 22	47 10
Mancelona	1,200 00	6,470 00	450 00	8,120 00	28 33	6 89	35 22
Manchester	1,000 00	4,330 00	......	5,330 00	34 42	4 70	39 12
Manton	1,000 00	3,375 00	450 00	4,825 00	26 85	10 95	37 80
Maple Rapids	850 00	2,400 00	......	3,250 00	35 00	26 98	61 98
Marcellus	1,000 00	3,032 50	270 00	4,302 50	35 66	15 28	50 94
Marion	1,000 00	2,377 50	......	3,377 50	24 91	5 38	30 29
**Marlborough	......	......	......	......	......	......	......
Marlette	1,000 00	5,150 00	......	6,150 00	25 22	5 89	31 11
**Maybee	......	......	......	......	......	......	......
Mayville	......	......	......	......	......	......	......
McBride	712 50	760 00	......	1,472 50	29 67	4 28	33 95
Mecosta	......	......	......	......	......	......	......
**Melvin	......	......	......	......	......	......	......
Memphis	900 00	2,352 50	......	3,252 50	25 45	7 37	32 82
Mendon	500 00	3,962 75	118 75	4,581 50	42 81	9 09	51 90
**Merrill	......	......	......	......	......	......	......
Mesick	700 00	1,350 00	......	2,050 00	8 54	6 58	15 12
Metamora	750 00	1,500 00	......	2,250 00	42 59	8 19	50 78
Middleville	......	......	......	......	......	......	......
**Mikado	......	......	......	......	......	......	......
Milan	1,000 00	3,715 00	......	4,715 00	43 89	5 40	49 29
Milford	1,000 00	3,300 00	......	4,300 00	25 99	2 27	28 26
Millersburg	800 00	1,225 00	......	2,025 00	40 00	3 07	43 07
Millington	1,000 00	2,695 00	......	3,695 00	21 71	5 93	27 64
Minden City	765 00	855 00	......	1,620 00	23 18	3 54	26 72
Montague	1,000 00	2,340 00	100 00	3,440 00	41 87	8 56	50 43
Montgomery	750 00	2,965 50	......	3,715 50	56 41	9 88	66 29
Montrose	650 00	1,350 00	......	2,000 00	32 50	9 47	41 97
Morenci	1,300 00	4,187 50	225 00	5,712 50	33 18	7 98	41 16
Morley	712 50	760 00	......	1,472 50	22 26	11 59	33 85
Morrice	800 00	1,750 00	......	2,550 00	30 00	4 93	34 93
Mt. Morris	950 00	2,000 00	......	2,950 00	16 94	6 12	23 06
Mulliken	......	......	......	......	......	......	......
Muir	......	......	......	......	......	......	......
Munising	1,500 00	12,690 88	700 00	14,890 88	41 93	9 58	51 51
Nashville	1,100 00	4,300 00	200 00	5,600 00	34 59	16 42	51 01
Newaygo	1,000 00	4,500 00	......	5,500 00	29 23	7 84	37 07
New Baltimore	1,000 00	2,875 00	200 00	4,075 00	43 75	6 24	39 99
**Newberry	......	......	......	......	......	......	......
New Buffalo	675 00	1,305 00	......	1,980 00	80 36	4 99	85 35

TABLE XIX.—*Continued.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$22 02	$8 98	$31 00	$17 96	$8 98	$26 94	$42 83	$8 96	$51 81	$24 76	$8 98	$33 74
15 87	8 28	24 15	16 05	8 28	24 33	....	....	....	20 69	8 28	28 97
17 11	1 58	18 69	20 38	1 58	21 96	12 57	1 58	14 15	21 24	1 58	22 82
10 52	6 19	16 71	11 25	6 19	17 44	....	....	....	15 31	6 19	21 50
14 68	4 21	18 89	15 38	4 21	19 59	....	....	....	19 50	4 21	23 71
17 42	7 27	24 69	9 03	7 27	16 30	30 95	7 27	38 22	20 00	7 27	27 27
14 87	7 49	22 36	20 19	7 49	27 68	....	....	....	27 20	7 49	34 78
20 83	1 76	22 59	7 50	1 76	9 26	....	....	....	11 94	1 76	12 70
20 65	5 45	26 10	13 23	5 45	18 68	....	....	....	21 85	5 45	27 30
....	....	....	17 31	9 66	26 97	....	....	....	20 37	9 66	30 03
12 50	5 30	17 80	12 50	5 30	17 80	13 51	5 30	18 81	20 13	5 30	25 43
18 64	6 98	25 62	15 41	6 98	22 39	17 19	6 98	24 17	17 89	6 98	24 87
14 16	3 43	17 59	9 25	3 43	12 68	....	....	....	13 12	3 43	16 55
10 96	5 09	16 05	7 97	5 09	13 06	....	....	....	15 91	5 09	21 00
15 00	8 22	23 22	20 00	8 22	28 22	19 52	8 22	27 74	16 44	8 22	24 66
20 78	6 89	27 67	17 14	6 89	24 03	16 25	6 89	23 14	20 46	6 89	27 35
15 28	4 70	19 98	15 88	4 70	20 58	....	....	....	21 40	4 70	26 10
9 62	10 95	20 57	14 60	10 95	25 55	41 43	10 95	52 38	16 87	10 95	27 82
20 00	26 98	46 98	35 53	26 98	62 51	....	....	....	31 55	26 98	58 53
14 69	15 28	29 97	14 73	15 28	30 01	....	....	....	19 82	15 28	35 10
13 40	5 38	18 87	8 84	5 38	14 22	....	....	....	14 01	5 38	19 39
....	....	....	....	....	....	....	....	....	....	....	....
14 93	5 89	20 82	13 91	5 89	19 80	31 58	5 89	37 47	19 10	5 89	24 99
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
12 26	4 28	16 54	11 88	4 28	16 16	....		....	16 92	4 28	21 20
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
25 00	7 37	32 37	14 21	7 37	21 58	20 00	7 37	27 37	20 33	7 37	27 70
16 41	9 09	25 50	18 01	9 09	27 10	....	....	....	25 17	9 09	34 26
....	....	....	....	....	....	....	....	....	....	....	....
14 14	6 58	20 72	13 15	6 58	19 73	....	....	....	11 26	6 58	17 84
25 00	8 19	33 19	15 71	8 19	23 90	....	....	....	26 79	8 19	34 98
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
13 55	5 40	18 95	11 79	5 40	17 19	....	....	....	17 79	5 40	23 19
15 38	2 27	17 65	16 66	2 27	18 93	....	....	....	19 55	2 27	21 82
8 00	3 07	11 07	11 40	3 07	14 47	7 33	3 07	10 40	12 42	3 07	15 49
18 75	5 93	24 68	11 28	5 93	17 21	14 47	5 93	20 40	16 20	5 93	22 13
10 97	3 54	14 51	6 14	3 54	9 68	....	....	....	11 57	3 54	15 11
20 75	8 56	29 31	12 99	8 56	21 55	....	....	....	21 23	8 56	29 79
13 50	9 88	23 38	15 12	9 88	25 00	11 64	9 88	21 52	28 58	9 88	38 46
13 51	9 47	22 98	13 23	9 47	22 70	11 11	9 47	20 58	15 75	9 47	25 22
14 86	7 98	22 84	13 58	7 98	21 56	....	....	....	19 43	7 98	27 41
10 86	11 50	22 45	8 08	11 59	19 67	....	....	....	12 91	11 59	24 50
16 66	4 93	21 59	17 71	4 93	22 64	17 71	4 93	22 64	21 61	4 93	26 54
15 00	6 12	21 12	11 23	6 12	17 35	....	....	....	14 89	6 12	21 01
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
21 11	9 58	30 69	14 78	9 58	24 36	24 16	9 58	33 74	20 48	9 58	30 06
16 56	16 42	32 98	13 05	16 42	30 37	....	....	....	20 07	16 42	36 49
6 40	7 84	14 24	18 58	7 84	26 42	15 44	7 84	23 28	16 66	7 84	24 50
21 56	6 24	27 80	13 30	6 24	19 54	....	....	....	24 69	6 24	30 93
....	....	....	....	....	....	....	....	....	....	....	....
9 88	4 90	14 87	7 89	4 99	12 88	....	....	....	17 68	4 99	22 67

TABLE XIX.—*Continued.*

Incorporated villages.	Amount paid super-intendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
New Haven	$800 00	$1,100 00	....	$1,900 00	$22 73	$5 54	$28 27
North Adams	900 00	2,785 00	....	3,685 00	47 81	9 16	56 97
North Branch	1,050 00	2,800 00	....	3,850 00	29 29	8 08	37 37
Northport	855 00	2,050 00	....	2,905 00	33 21	18 93	52 14
Northville	1,200 00	5,853 00	$525 00	7,578 00	30 44	6 02	36 46
Oakley	540 00	315 00	....	855 00	....	....	....
**Oakwood	....	....	....	....	....	....	....
Olivet	1,000 00	3,050 00	....	4,050 00	34 67	9 12	43 79
Onekama	800 00	1,215 00	....	2,015 00	24 10	7 53	31 63
**Onsted	....	....	....	....	....	....	....
Ontonagon	....	....	....	....	....	....	....
Orion	850 00	2,822 50	....	3,672 50	29 49	5 31	34 80
Ortonville	700 00	1,200 00	....	1,900 00	42 30	8 37	50 67
Oscoda	....	....	....	....	....	....	....
Otisville	750 00	1,890 00	....	2,640 00	80 63	5 46	86 09
Otsego	1,500 00	11,450 00	1,050 00	14,000 00	48 50	8 47	56 97
Otter Lake	....	....	....	....	....	....	....
Ovid	1,200 00	4,780 00	146 25	6,126 25	28 46	8 44	36 90
**Owendale	....	....	....	....	....	....	....
Oxford	1,100 00	5,155 00	450 00	6,705 00	54 50	7 86	62 36
Parma	1,000 00	1,975 00	....	2,975 00	29 17	8 42	37 59
Paw Paw	1,400 00	5,896 25	1,120 00	8,416 25	23 06	10 19	33 25
**Peck	....	....	....	....	....	....	....
Pellston	1,100 00	3,999 00	....	5,099 00	52 62	4 45	57 07
Pentwater	1,200 00	4,025 00	500 00	5,725 00	38 21	8 70	46 91
**Perrinton	....	....	....	....	....	....	....
Perry	1,050 00	2,375 00	....	3,425 00	49 24	7 98	57 22
Petersburg	720 00	1,863 00	....	2,583 00	24 37	4 28	28 65
Pewamo	675 00	1,170 00	....	1,845 00	28 12	6 66	34 78
Pierson	585 00	387 00	....	972 00	53 18	6 23	59 41
Pigeon	1,000 00	2,694 00	....	3,694 00	33 75	5 46	39 21
Pinckney	900 00	1,750 00	....	2,650 00	33 33	5 94	39 27
Pinconning	1,100 00	3,575 00	....	4,675 00	50 00	8 40	58 40
Plainwell	....	....	....	....	....	....	....
Plymouth	1,375 00	6,612 50	600 00	8,587 50	32 96	12 75	45 71
Port Austin	800 00	2,300 00	....	3,100 00	53 51	6 87	60 38
Port Hope	....	....	....	....	....	....	....
Portland	1,500 00	7,000 00	....	8,500 00	38 88	13 43	52 31
Port Sanilac	630 00	675 00	....	1,305 00	27 39	2 72	30 11
**Posen	....	....	....	....	....	....	....
Potterville	500 00	1,615 00	....	2,115 00	11 66	11 79	23 45
Quincy	1,200 00	3,288 75	....	4,488 75	21 11	6 86	27 97
Reading	1,100 00	3,725 00	....	4,825 00	26 51	9 28	35 79
Redford	....	....	....	....	....	....	....
Red Jacket	....	....	....	....	....	....	....
Reed City	1,250 00	5,775 00	550 00	7,575 00	36 81	4 31	41 12
Reese	900 00	1,300 00	....	2,200 00	77 77	9 09	86 86
Richland	....	....	....	....	....	....	....
Richmond	1,050 00	5,000 00	550 00	6,600 00	95 16	8 91	104 07
River Rouge	2,775 00	19,917 91	1,550 00	24,242 91	76 32	23 37	99 60
Rochester	1,000 00	3,825 00	....	4,825 00	34 08	4 76	38 84
Rockford	950 00	2,867 25	128 00	3,945 25	24 12	10 08	34 20
Rogers	900 00	2,645 00	....	3,545 00	40 00	4 59	44 59
Romeo	1,300 00	5,535 00	579 00	7,414 00	35 28	7 23	42 51
Roscommon	800 00	2,050 00	....	2,850 00	72 44	4 85	77 29

TABLE XIX.—*Continued.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$21 53	$5 54	$27 09	$9 91	$5 54	$15 45	....	....	....	$16 52	$5 54	$22 06
16 00	9 16	25 16	15 48	9 16	24 64	....	....	....	31 23	9 16	40 39
18 73	8 08	26 81	11 54	8 08	19 62	....	....	....	19 64	8 08	27 72
13 17	18 93	32 10	8 09	18 93	27 02	....	....	....	15 21	18 93	34 14
17 21	6 02	23 23	15 91	6 02	21 93	$30 42	$6 02	$36 44	20 76	6 02	26 78
18 62	3 69	22 31	12 60	3 69	16 29	....	....	....	15 83	3 69	19 52
....	....	....	....	....	....	....	....	....	....	....	....
25 64	9 12	34 76	15 52	9 12	24 64	....	....	....	25 47	9 12	34 59
12 27	7 53	19 80	8 44	7 53	15 97	....	....	....	15 38	7 53	22 91
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
18 33	5 31	23 64	16 14	5 31	21 45	....	....	....	20 07	5 31	25 38
8 00	8 37	16 37	7 14	8 37	15 51	....	....	....	14 38	8 37	22 75
....	....	....	....	....	....	....	....	....	....	....	....
15 00	5 46	20 46	9 37	5 46	14 83	....	....	....	19 41	5 46	24 87
22 51	8 47	30 98	21 24	8 47	29 71	....	....	....	26 02	8 47	34 49
....	....	....	....	....	....	....	....	....	....	....	....
17 50	8 44	25 94	15 99	8 44	24 43	....	....	....	20 56	8 44	29 00
....	....	....	....	....	....	....	....	....	....	....	....
18 22	7 86	26 08	15 19	7 86	23 05	13 16	7 86	21 02	24 29	7 86	32 15
22 00	8 42	30 42	13 85	8 42	22 27	....	....	....	20 24	8 42	28 66
31 15	10 19	41 34	14 55	10 19	24 74	21 42	10 19	31 61	21 09	10 19	31 28
....	....	....	....	....	....	....	....	....	....	....	....
14 19	4 45	18 64	11 65	4 45	16 10	11 52	4 45	15 97	18 21	4 45	22 66
26 34	8 70	35 04	17 24	8 70	25 94	17 46	8 70	26 16	23 75	8 70	32 45
....	....	....	....	....	....	....	....	....	....	....	....
12 86	7 98	20 84	12 50	7 98	20 48	....	....	....	19 57	7 98	27 55
12 66	4 28	16 94	9 26	4 28	13 54	11 25	4 28	15 53	14 19	4 28	18 47
34 61	6 66	41 27	13 11	6 66	19 77	12 86	6 66	19 52	20 05	6 66	26 71
....	....	....	5 61	6 23	11 84	....	....	....	12 15	6 23	18 38
19 43	5 46	24 89	12 84	5 46	18 30	8 77	5 46	14 23	17 02	5 46	22 48
14 06	5 94	20 00	16 33	5 94	22 27	....	....	....	21 54	5 94	27 48
21 12	8 40	29 52	10 71	8 40	19 11	10 71	8 40	19 11	17 32	8 40	25 72
....	....	....	....	....	....	....	....	....	....	....	....
17 77	12 75	30 52	17 18	12 75	29 93	18 13	12 75	30 88	21 09	12 75	33 84
17 40	6 87	24 27	10 60	6 87	17 47	....	....	....	17 32	6 87	24 10
....	....	....	....	....	....	....	....	....	....	....	....
28 44	13 43	41 87	18 26	13 43	31 69	....	....	....	27 24	13 43	40 67
11 61	2 72	14 33	7 00	2 72	9 72	....	....	....	13 18	2 72	15 90
....	....	....	....	....	....	....	....	....	....	....	....
10 75	11 79	22 54	27 93	11 79	39 72	....	....	....	14 68	11 79	26 47
28 50	6 86	35 36	10 39	6 86	17 25	8 44	6 86	15 30	16 32	6 86	23 18
16 55	9 28	25 83	12 97	9 28	22 25	....	....	....	19 38	9 28	28 66
....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....
18 65	4 31	22 96	16 20	4 31	20 51	13 28	4 31	17 59	20 86	4 31	25 17
8 00	9 09	17 09	6 45	9 09	15 54	....	....	....	16 92	9 09	26 01
....	....	....	....	....	....	....	....	....	....	....	....
19 51	8 91	28 42	12 35	8 91	21 26	....	....	....	23 66	8 91	32 57
24 46	23 37	47 83	20 79	23 37	44 16	21 08	23 37	44 45	25 15	23 37	48 52
11 84	4 76	16 60	9 00	4 76	13 76	11 05	4 76	15 81	14 98	4 76	19 74
11 11	10 08	21 19	8 81	10 08	18 89	....	....	....	14 14	10 08	24 22
15 11	4 59	19 70	8 90	4 59	13 49	....	....	....	12 62	4 59	17 21
13 06	7 23	20 29	18 02	7 23	25 25	14 64	7 23	21 87	20 54	7 23	27 77
18 22	4 85	23 07	10 87	4 85	15 72	27 50	4 85	32 35	25 45	4 85	30 30

TABLE XIX.—*Concluded.*

Incorporated villages.	Amount paid superintendent.	Amount paid regular teachers.	Amount paid special teachers.	Total amount paid for instruction.	Cost of educa		
					High school.		
					Instruction.	Incidentals.	Total.
Royal Oak	$1,300 00	$6,075 00	$500 00	$7,875 00	$43 87	$14 64	$58 51
St. Charles	1,200 00	5,495 00	300 00	6,995 00	33 33	89	34 22
St. Clair Heights							
Saline	1,150 00	2,750 00	250 00	4,150 00	30 60	6 94	37 54
Sand Lake							
Saranac	1,050 00	3,450 00		4,500 00	27 24	7 06	34 30
Saugatuck	765 00	2,340 00		3,105 00	30 39	5 72	36 11
Schoolcraft	1,050 00	3,199 50	270 00	4,519 50	46 22	9 46	54 68
Sebewaing	1,200 00	3,540 00	341 25	5,086 25	49 15	15 38	64 53
Shelby	1,000 00	5,192 00	522 50	6,714 50	29 71	6 50	36 21
Shepherd	950 00	3,015 00	427 50	4,392 50	30 85	1 82	32 67
Sheridan	810 00	1,530 00		2,340 00	29 02	3 89	32 91
Sherman	720 00	1,242 00		1,962 00	37 89	7 20	45 09
Sherwood	850 00	1,500 00		2,350 00	29 31	4 23	33 54
**Sibley							
South Lyon	950 00	1,872 50		2,822 50	32 88	4 39	37 27
**South Range							
Sparta	1,050 00	5,325 00	550 00	6,925 00	20 31	6 09	26 40
Spring Lake	1,000 00	1,622 00		2,622 00	81 82	6 44	88 26
Springport	1,000 00	2,000 00		3,000 00	32 50	3 74	36 24
Stambaugh	1,700 00	15,609 00	1,350 00	18,659 00	50 34	24 74	75 08
Stanwood	675 00	765 00		1,440 00	20 46	4 09	24 55
Stephenson							
Stevensville							
Stockbridge	900 00	3,210 00		4,110 00	22 50	4 15	26 65
Sunfield	900 00	1,852 50		2,752 50	32 33	4 52	36 85
Sutton's Bay	700 00	1,215 00		1,915 00	36 84	5 38	42 22
Tecumseh	1,600 00	8,150 00	550 00	10,300 00	31 25	5 93	37 18
Tekonsha	900 00	1,832 50	250 00	2,982 50	21 23	3 02	24 25
Thompsonville							
Three Oaks	1,200 00	3,735 00	405 00	5,340 00	28 48	5 81	34 29
**Tower							
Trenton	900 00	4,575 00	200 00	5,675 00	67 24	14 28	81 52
Tustin	855 00	1,890 00		2,745 00	32 83	7 22	40 05
Twining	630 00	1,170 00		1,800 00	16 02	8 42	24 44
Ubly	800 00	800 00		1,600 00	28 57	2 53	31 10
Union City	1,240 00	6,095 00	600 00	7,935 00	53 50	4 62	58 12
Unionville	600 00	1,850 00		2,450 00	24 00	3 94	27 94
Utica	1,000 00	2,000 00		3,000 00	34 88	13 88	48 76
Vandalia	900 00	1,440 00		2,340 00	32 73	4 63	37 36
Vanderbilt	700 00	1,357 50	437 50	2,495 00	65 91	6 44	72 35
Vassar	1,175 00	5,325 00	500 00	7,000 00	36 81	6 87	43 68
Vermontville	950 00	2,812 50		3,762 50	31 15	5 78	36 93
Vernon	850 00	1,330 00		2,180 00	125 00	7 74	132 74
Vicksburg	1,400 00	5,762 50		7,162 50	40 47	1 38	41 85
Wakefield	2,000 00	16,300 00	650 00	18,950 00	95 55	15 52	111 07
Waldron	750 00	1,665 00		2,415 00	15 49	9 52	25 01
**Walkerville							
Warren	495 00	337 50		832 50			
Watervliet	1,000 00	3,290 00	800 00	5,090 00	37 77	7 80	45 57
Wayland	799 92	1,845 00		2,644 92	25 19	5 58	30 77
Wayne	1,100 00	4,925 00	200 00	6,225 00	30 22	7 25	37 47
Webberville	675 00	1,215 00		1,890 00	21 09	12 79	33 88
**Westphalia							
White Cloud	800 00	2,325 75	165 00	3,280 75	29 60	4 37	33 97
Whitehall	1,000 00	3,842 50	152 00	4,994 50	33 51	7 59	41 10
White Pigeon	1,100 00	2,947 50		4,047 50	45 44	11 77	57 21
Williamston	1,200 00	5,150 00	450 00	6,800 00	36 56	8 79	45 35
Wolverine	800 00	2,960 00		3,760 00	33 55	5 71	39 26
Woodland	612 50	825 00		1,437 50	14 58	3 93	18 51

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*When blank occurs, item has not been reported. **Not legally graded. †Report included in Lake Linden. ‡Includes Calumet and Red Jacket.

TABLE XIX.—*Concluded.*

tion per capita in—

Grammar department.			Primary department.			Kindergarten department.			Whole school.		
Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.	Instruction.	Incidentals.	Total.
$22 27	$14 64	$36 91	$14 67	$14 64	$29 31	......	......	......	$20 78	$14 64	$35 42
17 07	89	17 96	12 16	89	13 05	$17 76	$0 89	$18 65	17 06	89	17 95
......	......	......	......	......	......	......	......	......	......	......	......
21 00	6 94	27 94	15 22	6 94	22 16	......	......	......	22 31	6 94	29 25
......	......	......	......	......	......	......	......	......	......	......	......
17 59	7 06	24 65	17 59	7 06	24 65	......	......	......	20 55	7 06	27 61
29 27	5 72	34 99	17 77	5 72	23 49	21 33	5 72	27 05	24 45	5 72	30 17
21 41	8 46	29 87	18 92	8 46	27 38	......	......	......	27 22	8 46	35 68
15 06	15 38	30 44	12 72	15 38	28 10	......	......	......	19 27	15 38	34 65
21 00	6 50	27 50	16 62	6 50	23 12	......	......	......	21 87	6 50	28 37
19 19	1 82	21 01	15 58	1 82	17 40	24 01	1 82	25 83	21 63	1 82	23 45
17 27	3 89	21 16	6 09	3 89	9 98	......	......	......	15 70	3 89	19 59
18 42	7 20	25 62	14 82	7 20	22 02	13 79	7 20	20 99	19 82	7 20	27 02
35 71	4 23	39 94	15 15	4 23	19 38	16 66	4 23	20 89	22 17	4 23	26 40
......	......	......	......	......	......	......	......	......	......	......	......
11 25	4 39	15 64	13 14	4 39	17 53	......	......	......	18 94	4 39	23 33
......	......	......	......	......	......	......	......	......	......	......	......
16 74	6 09	22 83	15 67	6 09	21 76	14 29	6 09	20 38	17 14	6 09	23 23
18 47	6 44	24 91	10 08	6 44	16 52	......	......	......	18 59	6 44	25 03
12 67	3 74	16 41	14 28	3 74	18 02	66 66	3 74	70 40	22 90	3 74	26 64
24 10	24 74	48 84	19 93	24 74	44 67	12 13	24 74	36 87	21 90	24 74	46 64
17 61	4 09	21 70	14 40	4 09	18 49	......	......	......	17 77	4 09	21 86
......	......	......	......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......	......	......	......
25 66	4 15	29 81	16 67	4 15	20 82	10 23	4 15	14 38	20 24	4 15	24 39
12 50	4 52	17 02	28 50	4 52	33 02	......	......	......	24 58	4 52	29 10
31 15	5 38	36 53	19 29	5 38	24 67	10 12	5 38	15 50	20 59	5 38	25 97
21 12	5 93	27 05	18 91	5 93	24 84	......	......	......	23 09	5 93	29 02
13 00	3 02	16 02	14 07	3 02	17 09	12 55	3 02	15 57	15 37	3 02	18 39
......	......	......	......	......	......	......	......	......	......	......	......
17 67	5 81	23 48	14 24	5 81	20 05	......	......	......	18 22	5 81	24 03
......	......	......	......	......	......	......	......	......	......	......	......
16 66	14 28	30 94	11 61	14 28	25 89	14 39	14 28	28 67	16 64	14 28	30 92
19 56	7 22	26 78	18 00	7 22	25 22	13 63	7 22	20 85	22 33	7 22	29 55
16 66	8 42	25 08	11 25	8 42	19 67	......	......	......	14 75	8 42	23 17
6 15	2 53	8 68	5 33	2 53	7 86	......	......	......	9 52	2 53	12 05
13 64	4 62	18 26	17 77	4 62	22 39	......	......	......	27 74	4 62	32 36
10 63	3 94	14 57	13 33	3 94	17 27	......	......	......	15 31	3 94	19 25
15 15	13 88	29 03	16 66	13 88	30 54	......	......	......	22 06	13 88	35 94
14 06	4 63	18 69	14 06	4 63	18 69	......	......	......	21 66	4 63	26 29
6 60	6 44	13 04	15 68	6 44	22 12	......	......	......	17 09	6 44	24 53
25 00	6 87	31 87	9 04	6 87	15 91	44 00	6 87	50 87	21 02	6 87	27 89
17 68	5 78	23 46	16 81	5 78	22 59	......	......	......	22 26	5 78	28 04
21 04	7 74	28 78	12 50	7 74	20 24	15 83	7 74	23 57	22 71	7 74	30 45
20 29	1 38	21 67	14 49	1 38	15 87	30 33	1 38	31 71	23 79	1 38	25 17
30 05	15 52	45 57	22 32	15 52	37 84	27 68	15 52	43 20	30 32	15 52	45 84
23 75	9 52	33 27	10 00	9 52	19 52	16 13	9 52	25 65	15 48	9 52	25 00
......	......	......	......	......	......	......	......	......	......	......	......
20 62	3 02	23 64	8 88	3 02	11 90	......	......	......	13 43	3 02	16 45
13 33	7 80	21 13	12 50	7 80	20 30	20 45	7 80	28 25	18 78	7 80	26 58
12 50	5 58	18 08	11 32	5 58	16 90	9 50	5 58	15 08	15 20	5 58	20 78
12 71	7 25	19 96	11 71	7 25	18 96	......	......	......	16 51	7 25	23 76
31 15	12 79	43 94	9 64	12 79	22 43	15 58	12 79	28 37	16 72	12 79	29 51
......	......	......	......	......	......	......	......	......	......	......	......
12 53	4 37	16 90	13 09	4 37	17 46	15 83	4 37	20 20	17 23	4 37	21 60
14 32	7 59	21 91	11 26	7 59	18 85	......	......	......	16 93	7 59	24 52
17 12	11 77	28 89	12 86	11 77	24 63	49 50	11 77	61 27	25 78	11 77	37 55
17 86	8 79	26 65	17 48	8 79	26 27	......	......	......	23 77	8 79	32 56
20 00	5 71	25 71	13 39	5 71	19 10	16 86	5 71	22 57	20 89	5 71	26 60
17 50	3 93	21 43	15 00	3 93	18 93	......	......	......	15 45	3 93	19 38

TABLE XXI.

Receipts and disbursements at teachers' institutes for the calendar year 1912.

Counties.	Location.	Date.	Receipts.		Expenditures.			
			County.	State.	Compensation of instructors and local committee.	Expenses of instructors.	Other expenses.	Total.
Totals			$8,229 89	$1,800 97	$7,475 50	$1,395 77	$1,559 59	$10,430 86
Alcona	Harrisville	Mar. 14-15	$56 00	$43 60	$57 00	$36 24	$6 36	$99 60
Alcona	Harrisville	Dec. 5-7	43 50	48 39	52 00	34 14	5 75	91 89
Allegan	Kalamazoo	June 24 to Aug. 2	30 48		18 00		12 48	30 48
Alpena	Alpena	Jan. 19-20	138 05		82 00	37 73	18 32	138 05
Antrim	Central Lake	Mar. 7-8	45 00	71 31	67 00	36 81	12 50	116 31
Arenac	Standish	Feb. 29-Mar. 1	31 00	74 73	72 00	22 03	11 70	105 73
Baraga	Marquette	June 24-Aug. 2	22 08		18 00		4 08	22 08
Baraga	L'Anse	Nov. 14-15	23 67	59 93	54 00	26 85	2 75	83 60
Barry	Hastings	Feb. 1-2	112 00	14 30	112 00	9 30	5 00	126 30
Barry	Kalamazoo	June 24-Aug. 2	38 04		18 00		20 04	38 04
Bay	Bay City	Jan. 24	128 66		76 00	11 01	41 65	128 66
Bay	Mt. Pleasant	June 24-Aug. 2	34 74		18 00		16 74	34 74
Benzie	Mt. Pleasant	June 24-Aug. 2	37 12		15 00		22 12	37 12
Berrien	Benton Harbor	Jan. 25-26	138 79		84 00	21 90	32 89	138 79
Branch	Coldwater	Jan. 15-16	89 60	15 73	79 00	23 33	3 00	105 33
Branch	Kalamazoo	June 24-Aug. 2	34 25		18 00		16 25	34 25
Branch	Coldwater	Aug. 31	15 78	30 00	31 00	11 78	3 00	45 78
Calhoun	Battle Creek	Feb. 14	75 48		52 00	13 48	10 00	75 48
Calhoun	Kalamazoo	June 24-Aug. 2	28 45		18 00		10 45	28 45
Cass	Dowagiac	Jan. 25	41 00		36 00		5 00	41 00
Cass	Kalamazoo	June 24-Aug. 2	31 57		18 00		13 57	31 57
Charlevoix	Boyne City	Jan. 16	59 07		50 33	3 39	5 35	59 07
Cheboygan	Cheboygan	Jan. 18-19	65 50	57 06	83 00	39 56		122 56
Cheboygan	Cheboygan	Oct. 21-25	75 00	37 20	70 00	18 13	24 07	112 20
Chippewa	Marquette	June 24-Aug. 2	15 85		6 00		9 85	15 85
Clare	Clare	Nov. 23-25	40 00	73 30	73 17	13 40	26 73	113 30
Clinton	St. Johns	Feb. 2-3	123 65		107 00	14 65	2 00	123 65
Clinton	Mt. Pleasant	June 24-Aug. 2	33 62		18 00		15 62	33 62
Delta	Escanaba	Jan. 29-30	77 37	14 66	79 00	7 03	6 00	92 03
Delta	Marquette	June 24-Aug. 2	30 10		15 00		15 10	30 10
Dickinson	Iron Mountain	Jan. 31	59 50		51 00		8 50	59 50
Dickinson	Iron Mountain	Oct. 3-4	140 00	100 00	240 00			240 00
Eaton	Charlotte	Jan. 31	94 97		81 00	1 72	12 25	94 97
Eaton	Kalamazoo	June 24-Aug. 2	22 04		18 00		4 04	22 04

Emmet	Petoskey	Jan. 17	74 49	1 22	52 00	14 96	8 75	75 71
Genesee	Flint	Jan. 26	113 08		76 00	11 08	26 00	113 08
Genesee	Flint	Mar. 16	59 47		36 00	15 14	8 33	59 47
Genesee	Flint	Aug. 31	50 91		31 00	13 87	6 04	50 91
Gladwin	Gladwin	Feb. 23–24	34 50	54 09	57 00	27 94	3 65	88 59
Gladwin	Mt. Pleasant	June 24–Aug. 2	39 06		18 00		21 06	39 06
Gogebic	Ironwood	Feb. 2	51 00		51 00			51 00
Grand Traverse	Traverse City	Jan. 15	32 41		16 00	15 11	1 30	32 41
Grand Traverse	Mt. Pleasant	June 24–Aug. 2	43 71		18 00		25 71	43 71
Gratiot	St. Louis	Jan. 29–30	100 49		79 00	11 49	10 00	100 49
Gratiot	Mt. Pleasant	June 24–Aug. 2	27 12		18 00		9 12	27 12
Hillsdale	Adrian	Feb. 16–17	59 03		54 00	2 64	2 39	59 03
Hillsdale	Kalamazoo	June 24–Aug. 2	35 24		18 00		17 24	35 24
Hillsdale	Hillsdale	Aug. 26–28	105 85		82 00	16 85	7 00	105 85
Houghton	Calumet	Feb. 3	113 65		91 00	16 10	6 55	113 65
Huron	Bad Axe	May 24–25	36 65		21 00	11 15	4 50	36 65
Huron	Bad Axe	Oct. 9–12	137 09		94 00	21 86	21 23	137 09
Ingham	"Traveling"	Jan. 15–17	46 99		31 00	14 41	1 58	46 99
Ingham	Mason	Feb. 2	94 70		81 00	4 40	9 30	94 70
Ingham	Ypsilanti	June 24–Aug. 2	38 19		18 00		20 19	38 19
Ionia	Ionia	Feb. 2–3	150 90		117 00	6 40	27 50	150 90
Ionia	Mt. Pleasant	June 24–Aug. 2	34 50		18 00		16 50	34 50
Iosco	East Tawas	Dec. 12–13	47 33	8 50	34 00	17 33	4 50	55 83
Iron	Iron Mountain	Oct. 3–4	175 00	100 00	275 00			275 00
Isabella	Mt. Pleasant	Jan. 29	70 82		61 00	6 82	3 00	70 82
Isabella	Mt. Pleasant	June 22–Aug. 2	18 00		18 00			18 00
Jackson	Jackson county	Feb. 5–10	78 13		53 00	6 98	18 15	78 13
Jackson	Jackson	Feb. 13		35 08	26 00		9 08	35 08
Jackson	Ypsilanti	June 24–Aug. 2	46 01		18 00		28 01	46 01
Kalamazoo	Kalamazoo	Feb. 15–16	83 79		62 00	5 54	16 25	83 79
Kalamazoo	Kalamazoo	June 28		60 00	60 00			60 00
Kalamazoo	Kalamazoo	June 24–Aug. 2	28 40		18 00		10 40	28 40
Kalkaska	Kalkaska	Nov. 22–23	45 64	49 72	52 00	28 18	15 18	95 36
Kalkaska	Mt. Pleasant	June 24–Aug. 2		45 51	18 00		27 51	45 51
Kent	Grand Rapids	Jan. 7–13	100 64		87 00	13 64		100 64
Kent	Grand Rapids	Jan. 27	36 00		36 00			36 00
Kent	"On wheels"	Feb. 6–12	68 37		50 00	18 37		68 37
Kent	Kalamazoo	June 24–Aug. 2	37 44		18 00		19 44	37 44
Kent	Grand Rapids	Dec. 6	50 00		50 00			50 00
Kent	Grand Rapids	Dec. 7	11 52		5 00	6 52		11 52
Lake	Luther	Mar. 13–15	97 63		57 64	29 34	10 65	97 63
Lapeer	Lapeer	Jan. 22	73 00	30 64	81 00	10 64	12 00	103 64
Lapeer	Lapeer	July 22–Aug. 2	76 50	53 30	100 00	29 80		129 80
Lenawee	Adrian	Feb. 16–17		59 02	34 36	9 91	14 75	59 02
Lenawee	Ypsilanti	June 24–Aug. 2	33 12		18 00		15 12	33 12
Lenawee	Adrian	Aug. 23	38 68		16 00	7 28	15 40	38 68
Livingston	Howell	Feb. 1	73 00		61 00	4 40	7 60	73 00
Livingston	Ypsilanti	June 24–Aug. 2	44 22		18 00		26 22	44 22
Luce	Marquette	June 24–Aug. 2	16 38		6 00		10 38	16 38
Macomb	Mt. Clemens	Jan. 29–30	109 00		102 00	7 00		109 00
Macomb	Ypsilanti	June 24–Aug. 2	18 11		9 00		9 11	18 11
Manistee	Bear Lake	Jan. 25–27	55 70		33 00	15 20	7 50	55 70
Manistee	Manistee	Feb. 8	36 00	20 05	41 00	15 05		56 05

TABLE XX.—*Concluded.*

Incorporated cities.	No. of teachers in the school, including superintendents and special teachers.	No. of special teachers employed.	No. of instructors in manual training.	No. of instructors in penmanship.	No. of instructors in drawing.	No. of instructors in music.	No. of instructors in kindergarten.	No. of instructors in commercial course.	No. of instructors in physical culture.	No. of instructors in domestic science.	No. of teachers of music, drawing and kindergarten qualified under Act No. 24 of 1905.	No. of other special teachers who are holders of certificates other than city certificates.
Lansing	130	13	2	......	1	1	7	......	......	1	6	6
Lapeer	23	3.5	1	.5	.5	.5	1	.5	......	1	2	3
Ludington	58	5	1	......	1	1	......	.5	.5	1	2	2
Mackinac Island City	4	......	......	......	......	......	......	......	......	......	......	......
Manistee	71	15	1.5	1	1	1	6	3	......	1.5	8	4
Manistique	34	7	......	......	.5	.5	4	1	......	1	7	2
Marine City	18	1	......	......	.5	.5	......	......	......	......	1	......
Marquette	67	12	2	......	1	1	5	1	......	......	......	2
Marshall	30	3	1	......	1	1	......	......	......	......	1	1
Mason	15	......	......	......	.5	.5	......	......	......	......	1	......
McBain	7	1.5	......	......	.25	.25	1	......	......	......	1	......
Menominee	72	16	1	1	1	1	10	2	......	1	6	6
Midland	22	3	1	......	......	1	......	......	......	......	......	2
Monroe	31	.7	.5	.25	.5	1	3	.25	......	1	5	1
Mt. Clemens	39	8	1	......	1	1	3	1	......	1	5	1
Mt. Pleasant	21	4	1	......	.5	.5	......	1	......	1	1	1
Muskegon	156.5	42.5	11	1	5	2	11.5	2	5	3	......	......
Muskegon Heights	14	2	......	......	.5	.5	1	......	......	......	2	......
Negaunee	48	8	1	......	.5	.5	3	1	1	1	3	......
Niles	34	3	......	......	1	1	......	1	......	......	......	2
Norway	39	1	......	......	.5	.5	......	......	......	......	1	......
Omer	4	......	......	......	......	......	......	......	......	......	......	......
Onaway	20	1	......	......	......	......	1	......	......	......	1	......
Owosso	52	9	1	......	1	1	4	1	......	1	6	3
Oscoda	8	......	......	......	......	......	......	......	......	......	......	......
Port Huron	94	7	1	......	1	1	......	2	......	1	7	2
Petoskey	34	3	......	......	1	1	......	1	......	......	3	......
Rose City	6	......	......	......	......	......	......	......	......	......	......	......
Saginaw, East Side	161	25	7	.5	2	2	......	4	......	9	......	......
Saginaw, West Side	86	8	3	......	1	1	......	1	......	4	2	6
St. Clair	15	1	......	......	.5	.5	1	.5	......	......	2	......
St. Ignace	13	......	......	......	......	......	......	......	......	......	......	......
St. Joseph	35	7	1	......	.5	.5	4	1	......	......	1	......
St. Louis	18	3.8	.5	......	.5	.7	1	.8	......	......	2	1
Sandusky	7	......	......	......	......	......	1	......	......	......	......	......
Sault Ste. Marie	62	9	1	.5	.5	1	4	1	......	1	2	5
Scottville	9	1	......	......	......	......	1	......	......	......	1	......
South Haven	31	3	.4	.5	.5	......	......	1	......	1	1	2
Standish	9	......	......	......	......	......	......	......	......	......	......	......
Stanton	11	2.25	.25	.3	.3	.4	1	......	......	......	1	1
Sturgis	24	2	......	......	.5	.5	1	......	......	......	2	......
Tawas City	9	.5	......	......	......	......	......	......	......	......	......	......
Three Rivers	33	3	1	1	1	1	4	1	......	1	......	......
Traverse City	65	11.5	1	......	1	1	5	1	......	1	4	......
West Branch	14	1	......	......	.5	.5	......	......	......	......	1	......
Whittemore	2	......	......	......	......	......	......	......	......	......	......	......
Wyandotte	37	6	1	......	1	1	2	......	......	1	3	2
Yale	13	1	......	......	......	......	1	......	......	......	1	......
Ypsilanti	36	5	1.5	......	1	1	......	......	......	1.5	......	4
Zeeland	20	1	......	......	.5	.5	2	......	......	......	......	......

St. Joseph	Kalamazoo	June 24-Aug. 2	30 20		18 00		12 20	30 20
Sanilac	Sandusky	Jan. 17-19	138 19		88 00	39 22	10 97	138 19
Schoolcraft	Marquette	June 24-Aug. 2	36 38		18 00		18 38	36 38
Shiawassee	Owosso	Jan. 31	111 22		62 00	5 44	43 78	111 22
Shiawassee	Ypsilanti	June 24-Aug. 2	44 97		18 00		26 97	44 97
Tuscola	Caro	Jan. 22-23	109 18		87 00	7 18	15 00	109 18
Van Buren	Hartford	Jan. 24	84 49		57 00	9 49	18 00	84 49
Van Buren	Van Buren Co.	Jan. 31-Feb. 2	47 00		36 00	11 00		47 00
Van Buren	Paw Paw	Mar. 8-9		51 38	32 00	12 38	7 00	51 38
Washtenaw	Ann Arbor	Feb. 12	20 35		1 00	3 60	15 75	20 35
Washtenaw	Ypsilanti	June 24-28		50 00	50 00			50 00
Washtenaw	Ypsilanti	June 24-Aug. 2	22 10		18 00		4 10	22 10
Washtenaw	Washtenaw Co.	Aug. 28-31	32 34		27 00		5 34	32 34
Wayne	Detroit	Jan. 27	91 40		76 00	2 70	12 70	91 40
Wayne	Wayne Co.	Feb. 12-17	141 99		113 00	9 64	19 35	141 99
Wayne	Detroit	Mar. 21	62 50		61 00	1 50		62 50
Wayne	Ypsilanti	June 24-Aug. 2	25 66		18 00		7 66	25 66
Wayne	River Rouge	Sept. 7	65 78		51 00	11 63	3 15	65 78
Wayne	Detroit	Nov. 12	155 00		155 00			155 00
Wayne	Detroit	Dec. 2-5	135 00		135 00			135 00
Wexford	Cadillac	Feb. 6-7	114 56		72 00	14 56	28 00	114 56
Wexford	Mt. Pleasant	June 24-Aug. 2	34 62		18 00		16 62	34 62

TABLE XXII.

Local committees, conductors and instructors at teachers' institutes for the calendar year 1912.

Counties.	Term.	Local committees.	Conductors.	Instructors.	Instructors.	Instructors.
Alcona	2 days	Thos. B. Cook	R. Clyde Ford	R. Clyde Ford	Lucy A. Sloan.	
Alcona	2 days	Thos. B. Cook	R. Clyde Ford	R. Clyde Ford	Esther Parker.	
Allegan	30 days	C. Lloyd Goodrich	D. B. Waldo.			
Alpena	2 days	E. L. Little	C. O. Hoyt	C. O. Hoyt	A. E. Winship.	
Antrim	2 days	C. L. Taisey	C. O. Hoyt	C. O. Hoyt	C. S. Larzelere.	
Arenac	2 days	Geo. H. Glasure	W. N. Ferris	W. N. Ferris	Minnie I. Termaat.	
Baraga	30 days	S. O. Clinton	James H. Kaye.			
Baraga	2 days	S. O. Clinton	James H. Kaye	James H. Kaye	Eleanor Lally.	
Barry	2 days	E. J. Edger	Ernest Burnham	Ernest Burnham	H. R. Pattengill	E. B. Bryan.
Barry	30 days	E. J. Edger	D. B. Waldo.			
Bay	1 day	Jno. B. Laing	D. B. Waldo	D. B. Waldo	E. B. Bryan.	
Bay	30 days	Jno. B. Laing	R. D. Calkins.			
Benzie	30 days	T. H. Fewlass	R. D. Calkins.			
Berrien	2 days	G. N. Otwell	F. W. Emerson	Christine M. Keck	W. D. Henderson	Chas. McKenny.
Branch	2 days	F. E. Robinson	R. D. Calkins	R. D. Calkins	W. N. Ferris.	
Branch	30 days	F. E. Robinson	D. B. Waldo.			
Branch	1 day	F. E. Robinson	W. H. French	W. H. French	D. B. Waldo.	
Calhoun	1 day	F. D. Miller	C. T. Grawn	C. T. Grawn	O. T. Corson.	
Calhoun	30 days	F. D. Miller	D. B. Waldo.			
Cass	1 day	Ruth H. Mosier	F. L. Keeler	Charles McKenny.		
Cass	30 days	Ruth H. Mosier	D. B. Waldo.			
Charlevcix	1 day	J. H. Milford	L. A. Butler	L. A. Butler	A. E. Winship.	
Cheboygan	2 days	W. L. Coffey	C. E. Holmes	C. E. Holmes	A. E. Winship	D. H. Roberts.
Cheboygan	5 days	W. L. Coffey	H. R. Pattengill	H. R. Pattengill.		
Chippewa	30 days	T. R. Easterday	G. S. Lasher	E. B. Bryan	S. D. Fess.	
Clare	3 days	A. H. Aldrich	C. T. Grawn	C. S. Larzelere	R. D. Calkins	Lois B. Wilson.
Clinton	2 days	Theo. H. Townsend	C. T. Grawn	C. T. Grawn	H. C. Lott	E. B. Bryan.
Clinton	30 days	Theo. H. Townsend	R. D. Calkins.			
Delta	2 days	P. R. Legg	L. L. Wright	James H. Kaye	L. D. Harvey	T. E. King.
Delta	30 days	P. R. Legg	James H. Kaye.			
Dickinson	1 day	Donald O'Hara	W. D. Hill	L. D. Harvey.		
Dickinson	2 days	Donald O'Hara	W. D. Hill	S. D. Fess	E. A. Ott.	
Eaton	1 day	Cynthia A. Green	T. W. Nadal	T. W. Nadal	E. B. Bryan.	
Eaton	30 days	Cynthia A. Green	D. B. Waldo.			
Emmet	1 day	H. S. Babcock	C. S. Larzelere	C. S. Larzelere	A. E. Winship.	
Genesee	1 day	H. E. Potter	D. B. Waldo	D. B. Waldo	E. B. Bryan	
Genesee	1 day	H. E. Potter	W. J. McKone	W. J. McKone	R. D. Calkins.	
Genesee	1 day	H. E. Potter	Ernest Burnham	Ernest Burnham	Margaret Wise.	
Gladwin	2 days	Floyd E. Armstrong	F. A. Barbour	F. A. Barbour	Wm. Bellis.	
Gladwin	30 days	Floyd E. Armstrong	R. D. Calkins.			
Gogebic	1 day	Laura Bowden	L. L. Wright	L. D. Harvey.		
Grand Traverse	1 day	Lee Hornsby	E. C. Warriner	E. C. Warriner.		
Grand Traverse	30 days	Lee Hornsby	R. D. Calkins.			
Gratiot	2 days	H. A. Potter	C. O. Hovt	C. O. Hoyt	S. D. Fess	C. F. Tambling.
Gratiot	30 days	H. A. Potter	R. D. Calkins.			

Hillsdale	2 days	Harry McClave	W. D. Henderson	O. T. Corson.		
Hillsdale	30 days	Harry McClave	D. B. Waldo.			
Hillsdale	3 days	Harry McClave	Ernest Burnham	Ernest Burnham	Margaret E. Wise	Harry McClave.
Houghton	1 day	S. O. Clinton, Wm. Bath	J. V. Brennan	J. V. Brennan	L. D. Harvey.	
Huron	2 days	W. H. Sparling	W. H. French	W. H. French.		
Huron	4 days	W. H. Sparling	Chas. McKenny	Chas. McKenny	E. C. Warriner	P. N. Sawyer.
Ingham	3 days	F. E. Searl	Myron A. Cobb	Myron A. Cobb.		
Ingham	1 day	F. E. Searl	F. A. Barbour	F. A. Barbour	E. B. Bryan.	
Ingham	30 days	F. E. Searl	Chas. McKenny.			
Ionia	2 days	Harvey H. Lowrey	W. N. Ferris	W. N. Ferris	S. D. Fess.	
Ionia	30 days	Harvey H. Lowrey	R. D. Calkins.			
Iosco	2 days	J. A. Campbell	C. O. Hoyt	C. O. Hoyt.		
Iron	2 days	John F. Mason	W. D. Hill	S. D. Fess	Earl Barnes.	
Isabella	1 day	E. T. Cameron	H. R. Pattengill	H. R. Pattengill.		
Isabella	30 days	E. T. Cameron	R. D. Calkins	S. D. Fess.		
Jackson	5 days	Thos. M. Sattler	Thos. M. Sattler	John C. Ketcham.		
Jackson	1 day	Thos. M. Sattler	F. L. Keeler	O. T. Corson.		
Jackson	30 days	Thos. M. Sattler	Chas. McKenny.			
Kalamazoo	2 days	Sheridan Mapes	S. O. Hartwell	S. O. Hartwell	Thos. W. Nadal	O. T. Corson.
Kalamazoo	1 day	Sheridan Mapes	D. B. Waldo	Charles H. Judd.		
Kalamazoo	30 days	Sheridan Mapes	D. B. Waldo.			
Kalkaska	2 days	Irene L. Getty	S. B. Laird	S. B. Laird	Minnie I. Termaat.	
Kalkaska	30 days	Irene L. Getty	R. D. Calkins.			
Kent	6 days	A. M. Freeland	H. R. Pattengill	H. R. Pattengill.		
Kent	1 day	A. M. Freeland	L. L. Wright	Chas. McKenny.		
Kent	6 days	A. M. Freeland	R. M. Reinhold	R. M. Reinhold.		
Kent	30 days	A. M. Freeland	D. B. Waldo.			
Kent	1 day	A. M. Freeland	W. A. Greeson	Emily J. Rice.		
Kent	1 day	A. M. Freeland	A. M. Freeland	G. N. Otwell.		
Lake	3 days	Edwin G. Johnson	I. A. Beddow	I. A. Beddow	Bruce Stickle.	
Lapeer	1 day	C. H. Naylor	W. J. McKone	W. J. McKone	E. B. Bryan.	
Lapeer	10 days	C. H. Naylor	C. H. Naylor	C. H. Naylor	Fred Broesamle.	
Lenawee	2 days	J. W. Gray	W. D. Henderson	W. D. Henderson.		
Lenawee	30 days	J. W. Gray	Chas. McKenny.			
Lenawee	1 day	J. W. Gray	H. R. Pattengill	H. R. Pattengill.		
Livingston	1 day	Maude Benjamin	H. R. Pattengill	H. R. Pattengill	S. D. Fess.	
Livingston	30 days	Maude Benjamin	Chas. McKenny.			
Luce	30 days	Eva E. Beurmann	James H. Kaye.			
Macomb	2 days	Arthur S. Hudson	J. O. Reed	J. O. Reed	E. B. Bryan.	
Macomb	30 days	O. D. Thompson	Chas. McKenny.			
Manistee	3 days	Josephine Reynolds	Myron A. Cobb	Myron A. Cobb.		
Manistee	1 day	Josephine Reynolds	H. R. Pattengill	H. R. Pattengill	W. N. Ferris.	
Marquette	1 day	A. E. Sterne	L. L. Wright	L. D. Harvey.		
Marquette	30 days	A. E. Sterne	James H. Kaye.			
Mason	2 days	C. A. Rinehart	H. R. Pattengill	H. R. Pattengill	W. N. Ferris.	
Mason	8 days	C. A. Rinehart	H. R. Pattengill	H. R. Pattengill.		
Mecosta	1 day	Bert J. Ford	W. D. Henderson	W. D. Henderson	W. N. Ferris.	
Mecosta	30 days	Bert J. Ford	W. N. Ferris	W. N. Ferris.		
Menominee	1 day	Jesse Hubbard	Jesse Hubbard	L. D. Harvey.		
Menominee	30 days	Jesse Hubbard	James H. Kaye.			
Midland	2 days	John A. Mustard	W. D. Henderson	W. D. Henderson	R. D. Calkins.	
Midland	30 days	John A. Mustard	R. D. Calkins.			
Missaukee	5 days	J. Q. Zuck	Geo. F. Roxburgh	Geo. F. Roxburgh	F. W. Flintoff.	
Missaukee	2 days	J. Q. Zuck	L. L. Tyler	L. L. Tyler	Irene Louise Getty.	

TABLE XX.—*Special report of*

Incorporated cities.	No. of teachers in the school, including superintendents and special teachers.	No. of special teachers employed.	No. of instructors in manual training.	No. of instructors in penmanship.	No. of instructors in drawing.	No. of instructors in music.	No. of instructors in kindergarten.	No. of instructors in commercial course.	No. of instructors in physical culture.	No. of instructors in domestic science.	No. of teachers of music, drawing and kindergarten qualified under Act No. 24 of 1905.	No. of other special teachers who are holders of certificates other than city certificates.
Adrian	57	10	2	......	1	1	......	2	2	2	2	2
Albion	37	4	1	......	1	1	......	......	......	1	3	......
Allegan	25	3	1	......	1	1	1	......	1	1	3	......
Alma	24	3	1	......	.5	.5	1	......	......	......	1	......
Alpena	58	5	......	.5	.5	1	......	2	......	......	1.5	2
Ann Arbor	93	12	1.5	......	2	1	1	3	2	1.5	......	......
Au Gres	3	......	......	......	......	......	......	......	......	......	......	......
Bad Axe	14	......	......	......	.5	.5	1	......	......	......	2	......
Battle Creek	148	9	3	......	1	2	......	......	1	2	......	4
Bay City	205	20	2	1	1	1	9	4	......	2	20	......
Beaverton	6	......	......	......	......	......	......	......	......	......	......	......
Belding	25	3	1	.5	.5	.5	......	.5	......	......	1	1
Benton Harbor	52	7	1	1	.5	.5	3	......	......	1	......	5
Bessemer	43	5	1	.5	.5	.5	2	......	......	1	1	3
Big Rapids	32	7	1	......	.5	.5	4	1	......	......	5	1
Boyne City	39	3	.5	.5	.5	1	1.5	1	......	......	3	......
Brown City	8	.5	......	......	......	......	.5	......	......	......	1	......
Cadillac	63	12	2	......	1	1	5	1	......	2	7	3
Charlevoix	21	3	......	.5	......	1	......	.5	......	......	1	2
Charlotte	31	2	1	......	.5	.5	......	1	......	......	1	1
Cheboygan	37	4	.5	......	.5	.5	......	2	......	.5	1	1
Clare	13	1	......	......	.5	.5	......	......	......	......	1	......
Coldwater	39	7	1	......	......	1	2	2	......	1	1	......
Coleman	8	......	......	......	......	......	......	......	......	......	......	......
Corunna	14	3	......	......	1	1	1	......	......	......	2	1
Croswell	12	1	......	......	......	......	1	......	......	......	1	......
Crystal Falls	45	9	1	.5	.5	.5	5	.5	......	1	3	6
Calumet	207	32	6	......	1	1	16	4	......	4	7	22
Detroit	1,681	13	1	1	2	1	4	......	3	......	162	7
Dowagiac	34	6	......	......	1	1	3	1	......	......	5	......
East Lansing	6	......	......	......	......	......	......	......	......	......	......	......
East Tawas	11	1	......	......	......	......	1	......	......	......	......	......
Eaton Rapids	16	3.5	1	......	.5	.5	1	......	......	.5	2	2
Escanaba	75	13	......	......	1	1	6	2	1.5	1.5	1	5
Flint	151	20	1	1	1	1	12	1	......	3	13	5
Fenton	17	2	......	.5	5	1	......	......	......	......	2	......
Gladstone	29	2	......	......	......	......	1	1	......	......	1	......
Gladwin	8	1	......	......	......	......	1	......	......	......	1	......
Grand Haven	35	5	......	......	.5	.5	3	1	......	......	4	1
Grand Ledge	18	2	......	......	.5	.5	1	......	......	......	2	......
Grand Rapids	536	111	35	......	1	1	36	5	......	10	42	......
Greenville	26	3	......	......	1	1	......	1	......	......	......	......
Hancock	44	4	1	......	......	1	......	2	......	......	1	3
Harrison	5	......	......	......	......	......	......	......	......	......	......	5
Hastings	34	7	1	1	1	1	1	1	......	1	......	7
Hillsdale	36	4	.5	......	1	.5	......	......	......	1	5	......
Holland	60	10	2	......	1	1	5	......	......	1	7	3
Houghton	68	16	2	1	1	1	8	1	......	2	9	6
Hudson	19	2	......	.5	.5	.5	.5	......	......	......	1	......
Ionia	35	5	.5	......	.5	.5	2	1	......	.5	4	......
Iron Mountain	74	5	1	......	1	1	......	1	......	1	......	......
Ironwood	88	27	3	.1	1	1	16	1.9	......	4	10	5
Ishpeming	88	22	4	1	1	1	10	2	......	3	7	3
Jackson	137	13	5	......	1	1	......	1	......	4	2	7
Kalamazoo	210	38	7	.5	3	2	16	1.5	......	8	23	15

the superintendents of schools.

No. of special teachers who have been granted city certificates.	Are all regular teachers holders of legal certificates of qualification.	No. holding certificates granted upon examination or indorsed by the State Board of Education.	No. holding Western Normal School certificates.	No. holding Northern Normal School certificates.	No. holding Central Normal School certificates.	No. holding State Normal College certificates.	No. holding certificates granted by State University under provisions of Sec. 4804 of compiled laws.	No. holding college certificates granted according to Sec. 4806 of compiled laws.	No. holding city certificates of first grade.	No. holding city certificates of second grade.	No. holding city certificates of third grade.	No. holding county certificates.	Portion of superintendents' time given to supervision.	No. of instructors in agriculture.
6	yes	1	......	......	......	15	5	4	3	3	11	5	all	......
1	yes	......	3	......	2	16	3	7	......	......	4	2	5-6	......
......	yes	......	13	......	1	6	2	......	......	......	......	......	all	......
1	yes	......	......	......	2	8	2	3	......	......	2	5	5-7	......
1	yes	5	......	......	1	......	......	3	3	19	24	......	all	......
12	yes	......	......	......	......	......	......	......	37	27	29	......	all	......
......	yes	......	......	......	......	......	......	......	......	......	......	3	......	......
......	yes	......	......	......	5	2	1	2	......	......	......	2	3-7	......
5	yes	......	14	1	2	29	20	5	4	54	......	10	all	......
......	yes	......	1	......	4	10	18	......	100	10	......	2	all	......
......	yes	......	......	......	1	2	......	......	......	......	......	3	none	......
......	yes	......	......	......	......	15	1	3	......	4	......	......	5-7	......
2	yes	2	2	......	......	15	2	6	2	6	2	8	all	......
1	yes	......	......	9	......	3	4	2	1	7	8	4	3-4	......
1	yes	2	4	......	1	5	4	2	......	3	4	......	all	......
......	yes	1	2	2	6	10	2	1	......	......	......	12	all	......
......	yes	......	......	......	1	3	1	......	......	......	......	3	1-2	......
2	yes	......	4	......	3	20	2	5	16	......	......	......	all	......
......	yes	......	......	......	7	3	......	2	......	......	......	6	3-4	......
......	yes	......	3	......	......	17	5	4	......	2	......	......	4-7	......
2	yes	......	2	......	4	12	2	......	......	6	6	......	all	......
......	yes	......	......	......	8	2	......	......	......	......	......	2	1-2	......
1	yes	......	3	......	......	10	2	2	20	......	......	......	7-8	......
......	yes	......	......	......	3	1	1	......	......	......	......	4	1-8	......
......	yes	......	......	......	......	3	3	......	......	6	......	......	1-2	......
......	yes	1	......	......	3	2	1	2	......	......	......	3	1-4	......
......	yes	......	......	12	1	6	2	2	......	......	......	19	all	......
10	yes	1	1	25	......	36	21	......	......	......	......	84	all	......
5	yes	......	......	......	......	......	......	......	1,681	......	......	......	all	......
1	yes	......	8	......	1	4	3	3	......	7	2	......	6-7	......
......	yes	2	......	......	1	1	......	2	......	......	......	......	1-5	......
......	yes	......	1	......	1	6	......	1	......	......	......	2	1-3	......
......	yes	......	1	......	......	6	2	1	......	5	......	......	5-7	......
7	yes	1	......	27	3	7	10	1	5	3	1	4	all	......
2	yes	......	......	......	......	......	......	......	22	38	70	......	all	......
......	yes	......	......	......	......	2	1	1	......	......	......	12	2-7	......
1	yes	......	......	12	2	4	......	3	......	3	3	3	......	......
......	yes	......	......	......	4	1	......	......	......	......	......	2	1-4	......
......	yes	......	2	......	......	6	5	1	3	10	......	2	6-7	......
......	yes	1	......	......	......	10	......	4	1	2	......	......	5-7	......
111	yes	......	......	......	......	......	......	......	129	245	77	......	all	......
3	yes	1	......	......	6	5	1	2	3	3	5	......	3-4	......
......	yes	1	1	18	......	8	4	1	6	......	......	4	all	......
......	yes	......	......	......	......	2	......	......	......	......	......	3	1-8	......
......	yes	3	1	......	3	9	2	......	......	......	......	7	6-7	......
......	yes	......	......	......	......	4	2	9	......	4	7	5	all	1
......	yes	......	5	......	3	27	......	7	2	4	2	......	all	......
......	yes	......	1	18	2	9	8	5	......	......	......	10	all	......
1	yes	......	1	......	......	5	2	1	......	2	2	......	1-2	......
1	yes	1	......	......	3	11	1	2	6	3	2	1	5-7	......
5	yes	......	......	15	......	12	1	1	16	22	1	1	all	......
12	yes	3	......	8	2	10	3	......	6	12	20	......	all	......
12	yes	......	......	44	......	4	5	......	18	......	7	......	all	......
4	yes	......	......	......	......	......	......	......	17	38	69	......	all	......
......	yes	12	44	1	5	24	20	27	3	18	17	1	all	......

TABLE XX.—*Concluded.*

Incorporated cities.	No. of teachers in the school, including superintendents and special teachers.	No. of special teachers employed.	No. of instructors in manual training.	No. of instructors in penmanship.	No. of instructors in drawing.	No. of instructors in music.	No. of instructors in kindergarten.	No. of instructors in commercial course.	No. of instructors in physical culture.	No. of instructors in domestic science.	No. of teachers of music, drawing and kindergarten qualified under Act No. 24 of 1905.	No. of other special teachers who are holders of certificates other than city certificates.
Lansing	130	13	2	.....	1	1	7	.....	.....	1	6	6
Lapeer	23	3.5	1	.5	.5	.5	1	.5	.....	1	2	3
Ludington	58	5	1	.....	1	1	.....	.5	.5	1	2	2
Mackinac Island City	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Manistee	71	15	1.5	1	1	1	6	3	.....	1.5	8	4
Manistique	34	7	.....	.....	.5	.5	4	1	.....	1	7	2
Marine City	18	1	.....	.....	.5	.5	.....	.....	.....	.....	1	.....
Marquette	67	12	2	.....	1	1	5	1	.....	.....	.....	2
Marshall	30	3	1	.....	1	1	.....	.....	.....	.....	1	1
Mason	15	.....	.....	.....	.5	.5	.....	.....	.....	.....	1	.....
McBain	7	1.5	.....	.....	.25	.25	1	.....	.....	.....	1	.....
Menominee	72	16	1	1	1	1	10	2	.....	1	6	6
Midland	22	3	1	.....	.....	1	.....	.....	.....	.....	.....	2
Monroe	31	.7	.5	.25	.5	1	3	.25	.....	1	5	1
Mt. Clemens	39	8	1	.....	1	1	3	1	.....	1	5	1
Mt. Pleasant	21	4	1	.....	.5	.5	.....	1	.....	1	1	1
Muskegon	156.5	42.5	11	1	5	2	11.5	2	5	3	.....	.....
Muskegon Heights	14	2	.....	.....	.5	.5	1	.....	.....	.....	2	.....
Negaunee	48	8	1	.....	.5	.5	3	1	1	1	3	.....
Niles	34	3	.....	.....	1	1	.....	1	.....	.....	.....	2
Norway	39	1	.....	.....	.5	.5	.....	.....	.....	.....	1	.....
Omer	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Onaway	20	1	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Owosso	52	9	1	.....	1	1	4	1	.....	1	6	3
Oscoda	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Port Huron	94	7	1	.....	1	1	.....	2	.....	1	7	2
Petoskey	34	3	.....	.....	1	1	.....	1	.....	.....	3	.....
Rose City	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Saginaw, East Side	161	25	7	.5	2	2	.....	4	.....	9	.....	.....
Saginaw, West Side	86	8	3	.....	1	1	.....	1	.....	4	2	6
St. Clair	15	1	.....	.....	.5	.5	1	.5	.....	.....	2	.....
St. Ignace	13	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Joseph	35	7	1	.....	.5	.5	4	1	.....	.....	1	.....
St. Louis	18	3.8	.5	.....	.5	.7	1	.8	.....	.....	2	1
Sandusky	7	.....	.....	.....	.....	.....	1	.....	.....	.....	.....	.....
Sault Ste. Marie	62	9	1	.5	.5	1	4	1	.....	1	2	5
Scottville	9	1	.....	.....	.....	.....	1	.....	.....	.....	1	.....
South Haven	31	3	.4	.5	.5	.....	.....	1	.....	1	1	2
Standish	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Stanton	11	2.25	.25	.3	.3	.4	1	.....	.....	.....	1	1
Sturgis	24	2	.....	.....	.5	.5	1	.....	.....	.....	2	.....
Tawas City	9	.5	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Three Rivers	33	3	1	1	1	1	4	1	.....	1	.....	.....
Traverse City	65	11.5	1	.....	1	1	5	1	.....	1	4	.....
West Branch	14	1	.....	.....	.5	.5	.....	.....	.....	.....	1	.....
Whittemore	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Wyandotte	37	6	1	.....	1	1	2	.....	.....	1	3	2
Yale	13	1	.....	.....	.....	.....	1	.....	.....	.....	1	.....
Ypsilanti	36	5	1.5	.....	1	1	.....	.....	.....	1.5	.....	4
Zeeland	20	1	.....	.....	.5	.5	2	.....	.....	.....	.....	.....

TABLE XX.—*Concluded.*

No. of special teachers who have been granted city certificates.	Are all regular teachers holders of legal certificates of qualification.	No. holding certificates granted upon examination or indorsed by the State Board of Education.	No. holding Western Normal School certificates.	No. holding Northern Normal School certificates.	No. holding Central Normal School certificates.	No. holding State Normal College certificates.	No. holding certificates granted by State University under provisions of Sec. 4804 of compiled laws.	No. holding college certificates granted according to Sec. 4805 of compiled laws.	No. holding city certificates of first grade.	No. holding city certificates of second grade.	No. holding city certificates of third grade.	No. holding county certificates.	Portion of superintendents' time given to supervision.	No. of instructors in agriculture.
......	yes	......	5	......	3	48	6	9	25	26	......	2	all	......
1	yes	......	1	......	......	9	2	2	1	......	......	7	3-4	......
1	yes	3	1	......	3	20	......	7	1	7	9	2	all	......
......	......	......	......	......	3	......	......	......	......	......	......	1	......	......
1	yes	1	......	......	2	6	5	5	4	15	20	......	all	......
......	yes	......	......	5	2	8	2	3	3	3	1	......	all	......
......	yes	......	......	......	......	......	......	......	......	......	......	7	2-3	......
10	yes	4	......	41	......	1	3	......	6	......	......	......	all	......
1	yes	......	1	......	......	5	7	1	2	3	7	1	3-4	......
......	yes	......	......	......	1	9	3	......	......	......	1	......	......	......
......	yes	......	......	......	2	4	......	......	......	......	......	1	1-8	......
5	yes	......	......	......	......	......	......	......	......	......	......	......	all	......
1	yes	1	......	......	2	6	......	3	1	......	2	4	2-3	......
......	yes	......	......	......	1	10	2	......	3	4	4	1	6-7	.5
2	yes	......	1	......	1	15	4	2	1	3	2	2	all	......
2	yes	......	......	......	8	......	2	3	1	......	2	1	6-7	......
12.5	yes	......	......	......	......	......	......	......	47	47	62.5	......	all	......
......	yes	1	1	......	1	5	......	......	......	......	......	4	3-7	......
5	yes	......	......	28	......	3	3	1	5	......	......	......	all	......
......	yes	2	1	......	2	11	3	4	......	2	......	7	all	......
......	yes	......	......	10	1	8	7	......	......	6	6	......	2-3	......
......	yes	......	......	......	......	......	......	......	......	......	......	4	......	......
......	yes	1	......	......	10	7	......	1	......	......	......	......	1-2	......
......	yes	......	......	......	3	20	6	3	......	4	6	1	all	......
......	yes	......	......	......	......	1	1	1	......	......	......	5	1-6	......
5	yes	2	......	......	2	6	9	6	10	12	47	......	all	......
......	yes	......	......	......	13	4	......	6	11	......	......	......	3-4	......
......	yes	......	......	......	2	1	......	......	......	......	......	3	1-10	......
......	yes	......	......	......	......	......	......	......	161	......	......	......	all	......
......	yes	2	......	......	......	4	8	9	56	......	......	......	all	......
......	yes	......	......	......	......	......	3	1	2	4	......	......	4-7	......
......	......	......	......	2	......	2	1	......	......	......	1	7	1-3	......
......	yes	1	4	......	4	11	......	......	7	2	5	......	......	.3
1	yes	......	......	......	3	2	2	1	1	2	2	1	1-2	......
......	yes	1	......	......	......	3	......	......	......	......	......	3	1-10	......
2	yes	1	1	3	12	24	6	3	5	4	......	......	all	......
......	yes	......	......	......	3	3	......	......	......	......	......	3	1-5	......
......	yes	1	4	......	1	11	1	2	3	1	4	......	all	.4
......	yes	1	......	......	1	6	......	......	......	......	......	1	1-3	......
......	yes	1	......	......	3	4	1	1	......	......	......	......	1-7	......
......	yes	1	3	......	......	2	4	......	2	5	4	1	6-7	......
......	yes	......	......	......	3	3	......	......	......	......	......	3	1-2	......
......	yes	......	2	......	......	3	2	5	3	2	13	2	6-7	......
......	yes	2	16	......	8	11	3	3	4	4	4	6	all	.5
......	yes	......	......	......	3	2	1	1	......	......	......	6	1-2	......
......	yes	......	......	......	......	......	......	......	......	......	......	2	......	......
1	yes	......	......	......	......	21	3	2	......	2	......	2	all	......
......	yes	......	......	......	......	9	1	......	......	......	1	......	3-7	......
1	yes	......	......	......	......	23	5	......	*1	......	1	1	6-7	......
......	......	......	......	......	......	......	......	......	......	......	......	......	5-6	......

TABLE XXI.

Receipts and disbursements at teachers' institutes for the calendar year 1912.

Counties.	Location.	Date.	Receipts.		Expenditures.			
			County.	State.	Compensation of instructors and local committee.	Expenses of instructors.	Other expenses.	Total.
Totals			$8,229 89	$1,800 97	$7,475 50	$1,395 77	$1,559 59	$10,430 86
Alcona	Harrisville	Mar. 14-15	$56 00	$43 60	$57 00	$36 24	$6 36	$99 60
Alcona	Harrisville	Dec. 5-7	43 50	48 39	52 00	34 14	5 75	91 89
Allegan	Kalamazoo	June 24 to Aug. 2	30 48		18 00		12 48	30 48
Alpena	Alpena	Jan. 19-20	138 05		82 00	37 73	18 32	138 05
Antrim	Central Lake	Mar. 7-8	45 00	71 31	67 00	36 81	12 50	116 31
Arenac	Standish	Feb. 29-Mar. 1	31 00	74 73	72 00	22 03	11 70	105 73
Baraga	Marquette	June 24-Aug. 2	22 08		18 00		4 08	22 08
Baraga	L'Anse	Nov. 14-15	23 67	59 93	54 00	26 85	2 75	83 60
Barry	Hastings	Feb. 1-2	112 00	14 30	112 00	9 30	5 00	126 30
Barry	Kalamazoo	June 24-Aug. 2	38 04		18 00		20 04	38 04
Bay	Bay City	Jan. 24	128 66		76 00	11 01	41 65	128 66
Bay	Mt. Pleasant	June 24-Aug. 2	34 74		18 00		16 74	34 74
Benzie	Mt. Pleasant	June 24-Aug. 2	37 12		15 00		22 12	37 12
Berrien	Benton Harbor	Jan. 25-26	138 79		84 00	21 90	32 89	138 79
Branch	Coldwater	Jan. 15-16	89 60	15 73	79 00	23 33	3 00	105 33
Branch	Kalamazoo	June 24-Aug. 2	34 25		18 00		16 25	34 25
Branch	Coldwater	Aug. 31	15 78	30 00	31 00	11 78	3 00	45 78
Calhoun	Battle Creek	Feb. 14	75 48		52 00	13 48	10 00	75 48
Calhoun	Kalamazoo	June 24-Aug. 2	28 45		18 00		10 45	28 45
Cass	Dowagiac	Jan. 25	41 00		36 00		5 00	41 00
Cass	Kalamazoo	June 24-Aug. 2	31 57		18 00		13 57	31 57
Charlevoix	Boyne City	Jan. 16	59 07		50 33	3 39	5 35	59 07
Cheboygan	Cheboygan	Jan. 18-19	65 50	57 06	83 00	39 56		122 56
Cheboygan	Cheboygan	Oct. 21-25	75 00	37 20	70 00	18 13	24 07	112 20
Chippewa	Marquette	June 24-Aug. 2	15 85		6 00		9 85	15 85
Clare	Clare	Nov. 23-25	40 00	73 30	73 17	13 40	26 73	113 30
Clinton	St. Johns	Feb. 2-3	123 65		107 00	14 65	2 00	123 65
Clinton	Mt. Pleasant	June 24-Aug. 2	33 62		18 00		15 62	33 62
Delta	Escanaba	Jan. 29-30	77 37	14 66	79 00	7 03	6 00	92 03
Delta	Marquette	June 24-Aug. 2	30 10		15 00		15 10	30 10
Dickinson	Iron Mountain	Jan. 31	59 50		51 00		8 50	59 50
Dickinson	Iron Mountain	Oct. 3-4	140 00	100 00	240 00			240 00
Eaton	Charlotte	Jan. 31	94 97		81 00	1 72	12 25	94 97
Eaton	Kalamazoo	June 24-Aug. 2	22 04		18 00		4 04	22 04

TABLE XXIII.—*Concluded.*

County.	Name.	Address.	Occupation.
Schoolcraft	W. T. S. Cornell	Manistique	Commissioner.
	Mary K. Mitchell	Manistique	Music teacher.
	Carey W. Dunton	Manistique	Lawyer.
Shiawassee	H. E. Slocum	Corunna	Commissioner.
	F. F. Curtis	New Lothrop	Teacher.
	Frank Colister	Perry	Teacher.
Tuscola	H. P. Bush	Caro	Commissioner.
	C. D. Butler	Fairgrove	Teacher.
	E. H. Dimond	Millington	Teacher.
Van Buren	V. R. Hungerford	Paw Paw	Commissioner.
	E. V. Root	Bangor	Teacher.
	C. R. Murphy	Lawton	Teacher.
Washtenaw	Evan Essery	Ann Arbor	Commissioner.
	Josephine Hoppe	Chelsea	Teacher.
	Cora L. Haas	Ann Arbor, R. 1	Teacher.
Wayne	E. W. Yost	Detroit, 408 Wayne Co. Bldg.	Commissioner.
	Thos. J. Gunn	Highland Park	Teacher.
	Fred C. Fischer	Belleville	Teacher.
Wexford	W. H. Faunce	Cadillac	Commissioner.
	H. J. Kenyon	Cadillac, R. 3	Teacher.
	Newton W. Chaffee	Sherman	Teacher.

TABLE XXI.—*Concluded.*

Counties.	Location.	Date.	Receipts.		Expenditures.			
			County.	State.	Compensation of instructors and local committee.	Expenses of instructors.	Other expenses.	Total.
Marquette	Ishpeming	Jan. 12	$51 00		$51 00			$51 00
Marquette	Marquette	June 24–Aug. 2	26 40		18 00		$8 40	26 40
Mason	Scottville	Feb. 9–10	23 83	$79 61	74 00	$14 44	15 00	103 44
Mason	Mason Co.	Oct. 1–9	31 97		18 00	13 97		31 97
Mecosta	Big Rapids	Feb. 5	70 40		41 00	11 90	17 50	70 40
Mecosta	Big Rapids	July 1–Aug. 9	200 00		200 00			200 00
Menominee	Menominee	Jan. 29	51 00		51 00			51 00
Menominee	Marquette	June 24–Aug. 2	40 28		18 00		22 28	40 28
Midland	Midland	Jan. 29–30	53 50	39 24	67 00	13 49	12 25	92 74
Midland	Mt. Pleasant	June 24–Aug. 2	19 26		12 00		7 26	19 26
Missaukee	Missaukee Co.	Jan. 8–13	22 00	48 81	50 00	10 81	10 00	70 81
Missaukee	Lake City	Nov. 21–22	65 44		49 00	15 19	1 25	65 44
Monroe	Monroe	Feb. 10	53 68		36 00	11 18	6 50	53 68
Monroe	Ypsilanti	June 24–Aug. 2	31 10		18 00		13 10	31 10
Monroe	Monroe	Aug. 31	33 75		16 00	12 25	5 50	33 75
Monroe	Monroe	Dec. 6	42 48		26 00	9 48	7 00	42 48
Newaygo	White Cloud	Jan. 22	67 02		52 00	15 02		67 02
Newaygo	Newaygo	April 5	28 84		17 00	11 84		28 84
Newaygo	Fremont	Nov. 22	25 80		16 00	9 80		25 80
Oakland	Pontiac	Jan. 19	70 57		27 00	8 33	35 24	70 57
Oakland	Ypsilanti	June 24–Aug. 2	32 80		18 00		14 80	32 80
Oceana	Shelby	Feb. 22–24	67 12		51 00	16 12		67 12
Ogemaw	West Branch	Jan. 25–27	66 00	51 22	83 00	28 02	6 20	117 22
Ontonagon	Ontonagon	Jan. 18–19	103 11		64 00	33 81	5 30	103 11
Ontonagon	Marquette	June 24–Aug. 2	19 61		9 00		10 61	19 61
Osceola	Reed City	Jan. 23	41 30	27 69	56 00	7 09	5 90	68 99
Osceola	Mt. Pleasant	June 24–Aug. 2	34 75		18 00		16 75	34 75
Oscoda	Mio	Mar. 25–29	30 50	40 61	40 00	26 11	5 00	71 11
Oscoda	Mio	Dec. 2–6	27 50	85 30	64 00	43 30	5 50	112 80
Ottawa	Holland	Feb. 1–2	63 75		47 00	16 75		63 75
Ottawa	Grand Haven	Feb. 8–9	66 81		47 00	19 81		66 81
Ottawa	Kalamazoo	June 24–Aug. 2	41 09		18 00		23 09	41 09
Presque Isle	Rogers City	Feb. 5–9	46 50	119 04	95 00	52 84	17 70	165 54
Roscommon	Roscommon	Sept. 16–20	12 45	50 73	45 00	12 33	5 85	63 18
Saginaw	Saginaw	Jan. 25	103 18		81 00	7 68	14 50	103 18
Saginaw	Frankenmuth	Mar. 1–2	61 40		39 00	8 90	13 50	61 40
Saginaw	St. Charles	April 5–6	58 44		34 00	11 86	12 58	58 44
Saginaw	Mt. Pleasant	June 24–Aug. 2	22 93		18 00		4 93	22 93
St. Clair	Port Huron	Jan. 30	94 73		81 00	7 23	6 50	94 73
St. Clair	Ypsilanti	June 24–Aug. 2	45 28		18 00		27 28	45 28

St. Joseph	Kalamazoo	June 24–Aug. 2	30 20		18 00		12 20	30 20
Sanilac	Sandusky	Jan. 17-19	138 19		88 00	39 22	10 97	138 19
Schoolcraft	Marquette	June 24–Aug. 2	36 38		18 00		18 38	36 38
Shiawassee	Owosso	Jan. 31	111 22		62 00	5 44	43 78	111 22
Shiawassee	Ypsilanti	June 24–Aug. 2	44 97		18 00		26 97	44 97
Tuscola	Caro	Jan. 22-23	109 18		87 00	7 18	15 00	109 18
Van Buren	Hartford	Jan. 24	84 49		57 00	9 49	18 00	84 49
Van Buren	Van Buren Co	Jan. 31–Feb. 2	47 00		36 00	11 00		47 00
Van Buren	Paw Paw	Mar. 8–9		51 38	32 00	12 38	7 00	51 38
Washtenaw	Ann Arbor	Feb. 12	20 35		1 00	3 60	15 75	20 35
Washtenaw	Ypsilanti	June 24–28		50 00	50 00			50 00
Washtenaw	Ypsilanti	June 24–Aug. 2	22 10		18 00		4 10	22 10
Washtenaw	Washtenaw Co	Aug. 28–31	32 34		27 00		5 34	32 34
Wayne	Detroit	Jan. 27	91 40		76 00	2 70	12 70	91 40
Wayne	Wayne Co	Feb. 12–17	141 99		113 00	9 64	19 35	141 99
Wayne	Detroit	Mar. 21	62 50		61 00	1 50		62 50
Wayne	Ypsilanti	June 24–Aug. 2	25 66		18 00		7 66	25 66
Wayne	River Rouge	Sept. 7	65 78		51 00	11 63	3 15	65 78
Wayne	Detroit	Nov. 12	155 00		155 00			155 00
Wayne	Detroit	Dec. 2–5	135 00		135 00			135 00
Wexford	Cadillac	Feb. 6–7	114 56		72 00	14 56	28 00	114 56
Wexford	Mt. Pleasant	June 24–Aug. 2	34 62		18 00		16 62	34 62

TABLE XXII.

Local committees, conductors and instructors at teachers' institutes for the calendar year 1912.

Counties.	Term.	Local committees.	Conductors.	Instructors.	Instructors.	Instructors.
Alcona	2 days	Thos. B. Cook	R. Clyde Ford	R. Clyde Ford	Lucy A. Sloan.	
Alcona	2 days	Thos. B. Cook	R. Clyde Ford	R. Clyde Ford	Esther Parker.	
Allegan	30 days	C. Lloyd Goodrich	D. B. Waldo.			
Alpena	2 days	E. L. Little	C. O. Hoyt	C. O. Hoyt	A. E. Winship.	
Antrim	2 days	C. L. Taisey	C. O. Hoyt	C. O. Hoyt	C. S. Larzelere.	
Arenac	2 days	Geo. H. Glasure	W. N. Ferris	W. N. Ferris	Minnie I. Termaat.	
Baraga	30 days	S. O. Clinton	James H. Kaye.			
Baraga	2 days	S. O. Clinton	James H. Kaye	James H. Kaye	Eleanor Lally.	
Barry	2 days	E. J. Edger	Ernest Burnham	Ernest Burnham	H. R. Pattengill	E. B. Bryan.
Barry	30 days	E. J. Edger	D. B. Waldo.			
Bay	1 day	Jno. B. Laing	D. B. Waldo	D. B. Waldo	E. B. Bryan.	
Bay	30 days	Jno. B. Laing	R. D. Calkins.			
Benzie	30 days	T. H. Fewlass	R. D. Calkins.			
Berrien	2 days	G. N. Otwell	F. W. Emerson	Christine M. Keck	W. D. Henderson	Chas. McKenny.
Branch	2 days	F. E. Robinson	R. D. Calkins	R. D. Calkins	W. N. Ferris.	
Branch	30 days	F. E. Robinson	D. B. Waldo.			
Branch	1 day	F. E. Robinson	W. H. French	W. H. French	D. B. Waldo.	
Calhoun	1 day	F. D. Miller	C. T. Grawn	C. T. Grawn	O. T. Corson.	
Calhoun	30 days	F. D. Miller	D. B. Waldo.			
Cass	1 day	Ruth H. Mosier	F. L. Keeler	Charles McKenny.		
Cass	30 days	Ruth H. Mosier	D. B. Waldo.			
Charlevcix	1 day	J. H. Milford	L. A. Butler	L. A. Butler	A. E. Winship.	
Cheboygan	2 days	W. L. Coffey	C. E. Holmes	C. E. Holmes	A. E. Winship	D. H. Roberts.
Cheboygan	5 days	W. L. Coffey	H. R. Pattengill	H. R. Pattengill.		
Chippewa	30 days	T. R. Easterday	G. S. Lasher	E. B. Bryan	S. D. Fess.	
Clare	3 days	A. H. Aldrich	C. T. Grawn	C. S. Larselere	R. D. Calkins	Lois B. Wilson.
Clinton	2 days	Theo. H. Townsend	C. T. Grawn	C. T. Grawn	H. C. Lott	E. B. Bryan.
Clinton	30 days	Theo. H. Townsend	R. D. Calkins.			
Delta	2 days	P. R. Legg	L. L. Wright	James H. Kaye	L. D. Harvey	T. E. King.
Delta	30 days	P. R. Legg	James H. Kaye.			
Dickinson	1 day	Donald O'Hara	W. D. Hill	L. D. Harvey.		
Dickinson	2 days	Donald O'Hara	W. D. Hill	S. D. Fess	E. A. Ott.	
Eaton	1 day	Cynthia A. Green	T. W. Nadal	T. W. Nadal	E. B. Bryan.	
Eaton	30 days	Cynthia A. Green	D. B. Waldo.			
Emmet	1 day	H. S. Babcock	C. S. Larzelere	C. S. Larzelere	A. E. Winship.	
Genesee	1 day	H. E. Potter	D. B. Waldo	D. B. Waldo	E. B. Bryan	
Genesee	1 day	H. E. Potter	W. J. McKone	W. J. McKone	R. D. Calkins.	
Genesee	1 day	H. E. Potter	Ernest Burnham	Ernest Burnham	Margaret Wise.	
Gladwin	2 days	Floyd E. Armstrong	F. A. Barbour	F. A. Barbour	Wm. Bellis.	
Gladwin	30 days	Floyd E. Armstrong	R. D. Calkins.			
Gogebic	1 day	Laura Bowden	L. L. Wright	L. D. Harvey.		
Grand Traverse	1 day	Lee Hornsby	E. C. Warriner	E. C. Warriner.		
Grand Traverse	30 days	Lee Hornsby	R. D. Calkins.			
Gratiot	2 days	H. A. Potter	C. O. Hovt	C. O. Hoyt	S. D. Fess	C. F. Tambling.
Gratiot	30 days	H. A. Potter	R. D. Calkins.			

Hillsdale	2 days	Harry McClave	W. D. Henderson	O. T. Corson.		
Hillsdale	30 days	Harry McClave	D. B. Waldo.			
Hillsdale	3 days	Harry McClave	Ernest Burnham	Ernest Burnham	Margaret E. Wise	Harry McClave.
Houghton	1 day	S. O. Clinton, Wm. Bath	J. V. Brennan	J. V. Brennan	L. D. Harvey.	
Huron	2 days	W. H. Sparling	W. H. French	W. H. French.		
Huron	4 days	W. H. Sparling	Chas. McKenny	Chas. McKenny	E. C. Warriner	P. N. Sawyer.
Ingham	3 days	F. E. Searl	Myron A. Cobb	Myron A. Cobb.		
Ingham	1 day	F. E. Searl	F. A. Barbour	F. A. Barbour	E. B. Bryan.	
Ingham	30 days	F. E. Searl	Chas. McKenny.			
Ionia	2 days	Harvey H. Lowrey	W. N. Ferris	W. N. Ferris	S. D. Fess.	
Ionia	30 days	Harvey H. Lowrey	R. D. Calkins.			
Iosco	2 days	J. A. Campbell	C. O. Hoyt	C. O. Hoyt.		
Iron	2 days	John F. Mason	W. D. Hill	S. D. Fess	Earl Barnes.	
Isabella	1 day	E. T. Cameron	H. R. Pattengill	H. R. Pattengill.		
Isabella	30 days	E. T. Cameron	R. D. Calkins	S. D. Fess.		
Jackson	5 days	Thos. M. Sattler	Thos. M. Sattler	John C. Ketcham.		
Jackson	1 day	Thos. M. Sattler	F. L. Keeler	O. T. Corson.		
Jackson	30 days	Thos. M. Sattler	Chas. McKenny.			
Kalamazoo	2 days	Sheridan Mapes	S. O. Hartwell	S. O. Hartwell	Thos. W. Nadal	O. T. Corson.
Kalamazoo	1 day	Sheridan Mapes	D. B. Waldo	Charles H. Judd.		
Kalamazoo	30 days	Sheridan Mapes	D. B. Waldo.			
Kalkaska	2 days	Irene L. Getty	S. B. Laird	S. B. Laird	Minnie L. Termaat.	
Kalkaska	30 days	Irene L. Getty	R. D. Calkins.			
Kent	6 days	A. M. Freeland	H. R. Pattengill	H. R. Pattengill.		
Kent	1 day	A. M. Freeland	L. L. Wright	Chas. McKenny.		
Kent	6 days	A. M. Freeland	R. M. Reinhold	R. M. Reinhold.		
Kent	30 days	A. M. Freeland	D. B. Waldo.			
Kent	1 day	A. M. Freeland	W. A. Greeson	Emily J. Rice.		
Kent	1 day	A. M. Freeland	A. M. Freeland	G. N. Otwell.		
Lake	3 days	Edwin G. Johnson	I. A. Beddow	I. A. Beddow	Bruce Stickle.	
Lapeer	1 day	C. H. Naylor	W. J. McKone	W. J. McKone	E. B. Bryan.	
Lapeer	10 days	C. H. Naylor	C. H. Naylor	C. H. Naylor	Fred Broesamle.	
Lenawee	2 days	J. W. Gray	W. D. Henderson	W. D. Henderson.		
Lenawee	30 days	J. W. Gray	Chas. McKenny.			
Lenawee	1 day	J. W. Gray	H. R. Pattengill	H. R. Pattengill.		
Livingston	1 day	Maude Benjamin	H. R. Pattengill	H. R. Pattengill	S. D. Fess.	
Livingston	30 days	Maude Benjamin	Chas. McKenny.			
Luce	30 days	Eva E. Beurmann	James H. Kaye.			
Macomb	2 days	Arthur S. Hudson	J. O. Reed	J. O. Reed	E. B. Bryan.	
Macomb	30 days	O. D. Thompson	Chas. McKenny.			
Manistee	3 days	Josephine Reynolds	Myron A. Cobb	Myron A. Cobb.		
Manistee	1 day	Josephine Reynolds	H. R. Pattengill	H. R. Pattengill	W. N. Ferris.	
Marquette	1 day	A. E. Sterne	L. L. Wright	L. D. Harvey.		
Marquette	30 days	A. E. Sterne	James H. Kaye.			
Mason	2 days	C. A. Rinehart	H. R. Pattengill	H. R. Pattengill	W. N. Ferris.	
Mason	8 days	C. A. Rinehart	H. R. Pattengill	H. R. Pattengill.		
Mecosta	1 day	Bert J. Ford	W. D. Henderson	W. D. Henderson	W. N. Ferris.	
Mecosta	30 days	Bert J. Ford	W. N. Ferris	W. N. Ferris.		
Menominee	1 day	Jesse Hubbard	Jesse Hubbard	L. D. Harvey.		
Menominee	30 days	Jesse Hubbard	James H. Kaye.			
Midland	2 days	John A. Mustard	W. D. Henderson	W. D. Henderson	R. D. Calkins.	
Midland	30 days	John A. Mustard	R. D. Calkins.			
Missaukee	5 days	J. Q. Zuck	Geo. F. Roxburgh	Geo. F. Roxburgh	F. W. Flintoff.	
Missaukee	2 days	J. Q. Zuck	L. L. Tyler	L. L. Tyler	Irene Louise Getty.	

TABLE XXII.—*Concluded.*

Counties.	Terms.	Local committees.	Conductors.	Instructors.	Instructors.	Instructors.
Monroe	1 day	James J. Kelley	W. H. French	W. H. French	Fern A. Parker	F. A. Barbour.
Monroe	30 days	James J. Kelley	Chas. McKenny.			
Monroe	1 day	James J. Kelley	W. D. Henderson	W. D. Henderson.		
Monroe	1 day	James J. Kelley	F. A. Barbour	F. A. Barbour	Jos. A. Jeffery.	
Newaygo	1 day	Isabella M. Becker	E. C. Warriner	Chas. McKenny	E. C. Warriner.	
Newaygo	1 day	Isabella M. Becker	L. L. Wright	Myron A Cobb.		
Newaygo	1 day	Isabella M. Becker	W. J. McKone	W. J. McKone.		
Oakland	1 day	A. L. Craft	W. N. Ferris	W. N. Ferris.		
Oakland	30 days	A. L. Craft	Chas. McKenny.			
Oceana	3 days	Emma R. Hutchins	H. R. Pattengill	H. R. Pattengill.		
Ogemaw	3 days	Josephine Woods	H. R. Pattengill	H. R. Pattengill	I. A. Beddow.	
Ontonagon	2 days	A. C. Adair	James H. Kaye	James H. Kaye	Carl E. Pray.	
Ontonagon	30 days	A. C. Adair	James H. Kaye.			
Osceola	1 day	Geo. F. Roxburgh	H. R. Pattengill	H. R. Pattengill	Chas. McKenny.	
Osceola	30 days	Geo. F. Roxburgh	R. D. Calkins.			
Oscoda	5 days	Marguerite L. Perry	G. S. Lasher	M. L. Billings.		
Oscoda	5 days	Marguerite L. Perry	W. L. Coffey	Cynthia A. Green	W. L. Coffey.	
Ottawa	2 days	E. E. Fell	W. H. French	W. H. French	S. B. Laird.	
Ottawa	2 days	L. H. VandenBerg	S. B. Laird	S. B. Laird	W. H. French.	
Ottawa	30 days	Nelson R. Stanton	D. B. Waldo.			
Presque Isle	5 days	M. H. Nester	D. H. Roberts	D. H. Roberts	W. H. Pearce.	
Roscommon	5 days	Ellen McCrea	C. S. Larzelere	C. S. Larzelere.		
Saginaw	1 day	Burton S. Tefft	E. G. Lancaster	E. G. Lancaster	E. B. Bryan.	
Saginaw	2 days	Burton S. Tefft	W. J. McKone	W. J. McKone	C. E. Warriner.	
Saginaw	2 days	Burton S. Tefft	C. O. Hoyt	C. O. Hoyt	Adella R. Jackson.	
Saginaw	30 days	Burton S. Tefft	C. T. Grawn.			
St. Clair	1 day	E. T. Blackney	S. B. Laird	E. B. Bryan.		
St. Clair	30 days	E. T. Blackney	Chas. McKenny.			
St. Joseph	30 days	F. J. Wheeler	D. B. Waldo.			
Sanilac	3 days	W. J. Musselman	R. D. Calkins	R. D. Calkins	W. N. Ferris	Adella R. Jackson.
Schoolcraft	30 days	W. T. S. Cornell	James H. Kaye.			
Shiawassee	1 day	H. E. Slocum	W. D. Henderson	W. D. Henderson	S. D. Fess.	
Shiawassee	30 days	H. E. Slocum	Chas. McKenny.			
Tuscola	2 days	H. P. Bush	F. A. Barbour	F. A. Barbour	E. B. Bryan.	
Tuscola	1 day	H. P. Bush	E. C. Warriner	E. C. Warriner.		
Van Buren	1 day	V. R. Hungerford	T. W. Nadal	T. W. Nadal	Chas. McKenny.	
Van Buren	3 days	V. R. Hungerford	Robt. M. Reinhold	Robt. M. Reinhold		
Van Buren	2 days	V. R. Hungerford	H. R. Pattengill	H. R. Pattengill.		
Washtenaw	1 day	Evan Essery	H. R. Pattengill			
Washtenaw	5 days	Evan Essery	L. H. Jones	Nat. M. Brigham.		
Washtenaw	30 days	Evan Essery	Chas. McKenny.			
Washtenaw	4 days	Evan Essery	Evan Essery.			
Wayne	30 days	E. W. Yost	Chas. McKenny.			
Wayne	1 day	E. W. Yost	Chas. McKenny	Chas. McKenny	Wheaton Smith	Florence A. Marsh.
Wayne	1 day	E. W. Yost	C. E. Chadsey	Semmas McManus.		
Wayne	4 days	E. W. Yost	C. E. Chadsey	Mari R. Hofer.		
Wexford	2 days	W. H. Faunce	H. R. Pattengill	H. R. Pattengill	W. N. Ferris.	
Wexford	30 days	W. H. Faunce	R. D. Calkins.			

TABLE XXIII.

County boards of school examiners, 1911-1912.

County.	Name.	Address.	Occupation.
Alcona	Thomas B. Cook	Harrisville	Commissioner.
	T. Franklin Webb	Harrisville	Teacher.
	Geo. R. Emerich	Harrisville	Teacher.
Alger	John W. Taylor	Munising	Commissioner.
	Leo. C. Hughes	Grand Marais	Teacher.
	Nat Hynes	Chatham	Teacher.
Allegan	C. L. Goodrich	Allegan	Commissioner.
	H. L. Reynolds	Fennville	Merchant.
	L. W. Fast	Otsego	Supt. of schools.
Alpena	E. L. Little	Alpena	Commissioner.
	Mrs. C. Turner	Dafoe	Teacher.
	Joseph Cavanaugh	Alpena	Lawyer.
Antrim	C. L. Taisey	Bellaire	Commissioner.
	G. E. Cabanis	Bellaire	Farmer.
	W. E. Olds	Central Lake	Teacher.
Arenac	G. H. Glasure	Standish	Commissioner.
	E. W. Fleming	Sterling	Teacher.
	E. C. Nunn	Turner	Teacher.
Baraga	S. O. Clinton	Baraga	Commissioner.
	Kate Curry	L'Anse	Teacher.
	J. I. Harrington	Baraga	Teacher.
Barry	Ernest J. Edger	Hastings	Commissioner.
	Webster Hastings	Coats Grove	Teacher.
	May O. Bump	Cloverdale	Teacher.
Bay	J. B. Laing	Bay City	Commissioner
	Jas. Cotter	Pinconning	Teacher.
	C. G. Hughes	Essexville	Teacher.
Benzie	T. H. Fewlass	Honor	Commissioner.
	Chas. A. Everest	Frankfort	Teacher.
	Edith Sawyer	Elberta	Teacher.
Berrien	G. N. Otwell	St. Joseph	Commissioner.
	A. J. Baker	Coloma	Teacher.
	J. L. Adams	Bridgman	Teacher.
Branch	F. E. Robinson	Coldwater	Commissioner.
	Carl Martin	Coldwater	Teacher.
	A. A. Nevereth	Sherwood	Teacher.
Calhoun	F. D. Miller	Marshall	Commissioner.
	E. L. McPherson	Battle Creek	Teacher.
	Josiah Phelps	Marshall	Teacher.
Cass	Ruth H. Mosier	Dowagiac	Commissioner.
	John Finley	Dowagiac, R. D. 8	Teacher.
	Mark L. Munyon	Cassopolis	Teacher.
Charlevoix	J. H. Milford	East Jordan	Commissioner.
	L. A. Butler	Boyne City	Teacher.
	I. M. De Voe	Charlevoix	Teacher.
Cheboygan	W. L. Coffey	Cheboygan	Commissioner.
	A. D. Grigsbee	Cheboygan	Insurance.
	Fraley McMillan	Indian River	Doctor.
Chippewa	T. R. Easterday	Sault Ste. Marie	Commissioner.
	T. B. Aldrich	Brimley	Teacher.
	Benj. Bosink	Detour	Teacher.
Clare	Asa H. Aldrich	Harrison	Commissioner.
	Peter A. Swan	Lake	Teacher.
	J. Francis McKenna	Gladwin	Teacher.
Clinton	Theo. H. Townsend	St. Johns	Commissioner.
	A. D. Jones	Elsie	Superintendent.
	Ruth Landers	Mt. Pleasant	Student.

TABLE XXIII.—*Continued.*

County.	Name.	Address.	Occupation.
Crawford	A. E. Irving	Grayling	Commissioner.
	J. A. Kalahar	Frederic	Teacher.
	A. A. Ellsworth	Grayling	Teacher.
Delta	Peter R. Legg	Gladstone	Commissioner.
	James Kenny	Schaffer	Teacher.
	Jas. H. MacDonald	Rapid River	Teacher.
Dickinson	Donald O'Hara	Iron Mountain	Commissioner.
	G. G. Malcolm	Norway	Superintendent.
	L. E. Amidon	Iron Mountain	Superintendent.
Eaton	Cynthia A. Queen	Charlotte	Commissioner.
	Geo. A. Knapp	Olivet	Teacher.
	C. C. Severance	Potterville	Teacher.
Emmet	H. S. Babcock	Harbor Springs	Commissioner.
	C. J. Severance	Levering	Teacher.
	E. C. Hartwell	Petoskey	Superintendent.
Genesee	H. E. Potter	Flint	Commissioner.
	J. L. Riegle	Montrose	Teacher.
	Lyda H. Johnson	Flint	Student.
Gladwin	F. E. Armstrong	Gladwin	Commissioner.
	C. J. Barnum	Beaverton	Teacher.
	Edmund Burke	Gladwin	Teacher.
Gogebic	Laura Bowden	Ironwood	Commissioner.
	C. R. Cobb	Bessemer	Superintendent.
	J. F. Reed	Wakefield	Superintendent.
Grand Traverse	Lee Hornsby	Traverse City	Commissioner.
	W. G. Willard	Fife Lake	Teacher.
	A. H. Clark	Kingsley	Teacher.
Gratiot	Howard A. Potter	Ithaca	Commissioner.
	Clark L. Hull	Ithaca	Teacher.
	F. E. Ellsworth	Alma	Superintendent.
Hillsdale	Harry McClave	Hillsdale	Commissioner.
	Frank Aldrich	Litchfield	Teacher.
	Arthur Kalder	Waldron	Teacher.
Houghton	Wm. Bath	Houghton	Commissioner.
	W. E. Peterman	Laurium	Lawyer.
	F. A. Jeffers	Painesdale	Teacher.
Huron	Wm. H. Sparling	Bad Axe	Commissioner.
	B. M. Hamill	Pigeon	Superintendent.
	Ezra Deneen	Grindstone City	Superintendent.
Ingham	F. E. Searl	Mason	Commissioner.
	Frank Murray	Dansville	Teacher.
	Clarence Vliet	Leslie	Teacher.
Ionia	Harvey H. Lowrey	Ionia	Commissioner.
	J. Calvin Linebaugh	Portland	Teacher.
	Frank C. Jones	Belding	Teacher.
Iosco	J. A. Campbell	Tawas City	Commissioner.
	Amanda Fiedler	Oscoda	Teacher.
	R. D. Brown	Hale	Merchant.
Iron	John F. Mason	Mansfield	Commissioner.
	H. M. Armstrong	Stambaugh	Teacher.
	W. D. Hill	Crystal Falls	Teacher.
Isabella	E. T. Cameron	Mt. Pleasant	Commissioner.
	H. C. Cassatt	Blanchard	Teacher.
	Allen Wolfe	Weidman	Teacher.
Jackson	Thos. M. Sattler	Jackson	Commissioner.
	P. J. O'Leary	Rives Jct	Teacher.
	J. Ray Fisher	Jackson	Teacher.

TABLE XXIII.—*Continued.*

County.	Name.	Address.	Occupation.
Kalamazoo	Sheridan Mapes	Kalamazoo	Commissioner.
	A. M. Nutten	Comstock	Teacher.
	P. H. Smith	Vicksburg	Teacher.
Kalkaska	Irene Louise Getty	Kalkaska	Commissioner.
	E. N. Phelps	Darragh	Teacher.
	Wm. Murphy	So. Boardman	Teacher.
Kent	A. M. Freeland	Grand Rapids	Commissioner.
	Robert A. Compton	Sand Lake	Teacher.
	C. Kent Jakeway	Grattan Center	Teacher.
Keweenaw	H. S. Winter	Mohawk	Commissioner.
	Clarence Chrysler	Phoenix	Teacher.
	F. M. Bradshaw	Gay	Teacher.
Lake	Edwin G. Johnson	Luther	Commissioner.
	Murray Nicol	Chase	Teacher.
	O. L. Dreys	Baldwin	Teacher.
Lapeer	C. H. Naylor	Lapeer	Commissioner.
	R. V. Langdon	No. Branch	Lawyer.
	Fred Broesamle	Almont	Teacher.
Leelanau	Bertha B. Campbell	Traverse City, R. 5	Commissioner.
	Fred A. Dago	Cedar	Teacher.
	Harry R. Dumbrille	Empire	Superintendent.
Lenawee	J. W. Gray	Adrian	Commissioner.
	D. C. Bowen	Clayton	Teacher.
	W. S. Cavanaugh	Weston	Superintendent.
Livingston	Maude Benjamin	Fowlerville	Commissioner.
	Arthur Rice	Hamburg	Teacher.
	Glenn Grieve	Fowlerville	Superintendent
Luce	Eva E. Beurmann	Newberry	Commissioner.
	Mrs. Anna Anten	Newberry	Teacher.
	Mrs. M. E. Chamberlain	Newberry	Teacher.
Mackinac	E. J. Lachance	St. Ignace	Commissioner.
	J. E. Quinlan	St. Ignace	Teacher.
	A. E. Cross	St. Ignace	Teacher.
Macomb	O. D. Thompson	Mt. Clemens	Commissioner.
	A. S. Hudson	Mt. Clemens	Teacher.
	Will L. Lee	Richmond	Teacher.
Manistee	Josephine A. Reynolds	Manistee	Commissioner.
	S. A. Jones	Manistee	Teacher.
	Julia Jaitner	Manistee	Teacher.
Marquette	Albert E. Sterne	Ishpeming	Commissioner.
	James H. Kaye	Marquette	Normal president.
	Thomas W. Clemo	Republic	Superintendent.
Mason	C. A. Rinehart	Scottville	Commissioner.
	Pauline A. Smith	Ludington	Teacher.
	Geo. D. Griswold	Custer	Teacher.
Mecosta	B. J. Ford	Big Rapids	Commissioner.
	Maud P. Lantz	Mecosta	Teacher.
	L. A. Mniece	Barryton	Teacher.
Menominee	Jesse Hubbard	Menominee	Commissioner.
	Jas. A. Garfield	Stephenson	Teacher.
	Catherine Sawyer	Menominee	Teacher.
Midland	John Mustard	Midland	Commissioner.
	G. V. Chapel	St. Louis, R. 7	Teacher.
	Agnes Menery	Coleman	Teacher.
Missaukee	John Q. Zuck	Lake City	Commissioner.
	M. R. Keyworth	Lake City	Superintendent.
	T. W. Flintoff	Jennings	

TABLE XXIII.—*Continued.*

County.	Name.	Address.	Occupation.
Monroe	Jas. J. Kelley	Monroe	Commissioner.
	M. L. Winters	Temperance	Teacher.
	C. W. Rook	Temperance	Teacher.
Montcalm	Eugene Straight	Stanton	Commissioner.
	C. F. Straight	Greenville	Teacher.
	J. E. McCleskey	Howard City	Teacher.
Montmorency	B. J. Watters	Hillman	Commissioner.
	Mrs. Grace Manier	Atlanta	Teacher.
	D. H. Farrier	Atlanta	Teacher.
Muskegon	Nellie B. Chisholm	Montague	Commissioner.
	Jas. H. Cogshall	Muskegon	
	L. R. Walker	Muskegon Heights	Superintendent.
Newaygo	Isabelle M. Becker	Fremont	Commissioner.
	Carrie L. Carter	Fremont	Teacher.
	D. J. Crawford	Grant	Teacher.
Oakland	A. L. Craft	Pontiac	Commissioner.
	Jas. A. Willson	Royal Oak	Teacher.
	S. H. Westcott	Orion	Teacher.
Oceana	Emma R. Hutchins	Hart	Commissioner.
	W. O. Cole	Shelby	Teacher.
	Frank Jensen	Hart	Superintendent.
Ogemaw	Josephine Woods	West Branch	Commissioner.
	H. S. Korcher	Rose City	Probate Judge.
	Archie McMillan	Prescott	Mail Carrier.
Ontonagon	A. C. Adair	Rockland	Commissioner.
	Marie E. Lindgren	Ewen	Teacher.
	E. F. Benson	Ontonagon	Superintendent.
Osceola	Geo. F. Roxburgh	Reed City	Commissioner.
	Frank C. Smith	Hersey	Teacher.
	Geo. E. Gamard	Reed City	Teacher.
Oscoda	Marguerite L. Perry	Mio	Commissioner.
	A. A. Miller	Fairview	Teacher.
	Georgia L. Fowler	Fairview	Student.
Otsego	Ray F. Jennings	Vanderbilt	Commissioner.
	Sim J. Lewis	Johannesburg	Bookkeeper.
	Ethel Connor	Gaylord	Teacher.
Ottawa	Nelson R. Stanton	Holland	Commissioner.
	Egbert Winter	Spring Lake	Teacher.
	Henry K. Boer	Jamestown	Teacher.
Presque Isle	M. H. Nester	Rogers	Commissioner.
	Martha Caldwell	Onaway	Teacher.
	Herbert Heir	Metz	Teacher.
Roscommon	Ellen McCrea	Roscommon	Commissioner.
	Frances Wehnes	Roscommon	Teacher.
	Mrs. M. W. Gibbons	Roscommon	Teacher.
Saginaw	Burton S. Tefft	Saginaw, W. S	Commissioner.
	James B. Griffin	Saginaw, W. S	Teacher.
	Geo. W. Reynolds	St. Charles	Teacher.
St. Clair	E. T. Blackney	Pt. Huron	Commissioner.
	H. L. Naumann	Pt. Huron	Teacher.
	Philip Keen	St. Clair	Teacher.
St. Joseph	F. J. Wheeler	Centerville	Commissioner.
	Geo. F. De Long	Three Rivers	Teacher.
	Lewis E. Miller	Sturgis	Teacher.
Sanilac	W. J. Musselmann	Sandusky	Commissioner.
	Anna Mahon	Downington	Teacher.
	G. F. Manning	Croswell	

TABLE XXIII.—*Concluded.*

County.	Name.	Address.	Occupation.
Schoolcraft	W. T. S. Cornell	Manistique	Commissioner.
	Mary K. Mitchell	Manistique	Music teacher.
	Carey W. Dunton	Manistique	Lawyer.
Shiawassee	H. E. Slocum	Corunna	Commissioner.
	F. F. Curtis	New Lothrop	Teacher.
	Frank Colister	Perry	Teacher.
Tuscola	H. P. Bush	Caro	Commissioner.
	C. D. Butler	Fairgrove	Teacher.
	E. H. Dimond	Millington	Teacher.
Van Buren	V. R. Hungerford	Paw Paw	Commissioner.
	E. V. Root	Bangor	Teacher.
	C. R. Murphy	Lawton	Teacher.
Washtenaw	Evan Essery	Ann Arbor	Commissioner.
	Josephine Hoppe	Chelsea	Teacher.
	Cora L. Haas	Ann Arbor, R. 1	Teacher.
Wayne	E. W. Yost	Detroit, 408 Wayne Co. Bldg.	Commissioner.
	Thos. J. Gunn	Highland Park	Teacher.
	Fred C. Fischer	Belleville	Teacher.
Wexford	W. H. Faunce	Cadillac	Commissioner.
	H. J. Kenyon	Cadillac, R. 3	Teacher.
	Newton W. Chaffee	Sherman	Teacher.

241
522
96
267
1126

TABLE XXIV.

General statistics of educational institutions compiled from reports of officers for the academic year 1911-1912.

Name of institution.	Location.	Name of president, superintendent or principal.	Date of organization.	Number of instructors.	Number of students or inmates during the year.	Number of students from Michigan.	Number of graduates at last commencement.	Whole No. of graduates since founded.	Number of volumes in library.	Number of volumes added to library during the year.
ESTABLISHED BY ACTS OF LEGISLATURE.										
Educational:										
Central Michigan Normal School	Mt. Pleasant	Charles T. Grawn	1891	40	1,061	1,053	241	2,456	15,000	1,500
Michigan Agricultural College	East Lansing	Jonathan L. Snyder	1857	127	1,702	1,518	165	1,844	36,079	1,851
Michigan College of Mines	Houghton	F. W. McNair	1885	30	186	106	52	668	25,361	731
Michigan State Normal College	Ypsilanti	L. H. Jones	1852	88	3,009	1,454	523	9,817	35,000	1,000
Northern State Normal School	Marquette	James H. Kaye	1899	26	700	682	96	1,010	15,172	697
University of Michigan	Ann Arbor	Harry Burns Hutchins	1837	441	5,582	2,941	1,157	29,319	305,684	17,591
Western State Normal School	Kalamazoo	Dwight B. Waldo	1904	47	1,411	1,379	267	1,235	9,000	1,100
Totals			......	799	13,651	9,133	2,500	46,349	441,296	24,470
Charitable:										
Industrial Home for Girls	Adrian	Mrs. Mary C. Johnson	1879	40	481	481	136	2,505	2,063	300
Industrial School for Boys	Lansing	Edward M. Lawson	1856	20	1,133	779	......	......	3,980	......
Michigan School for the Blind	Lansing	Clarence E. Holmes	1880	21	156	156	6	92	4,625	125
Michigan School for the Deaf	Flint	Francis D. Clarke	1854	37	309	309	......	1,790	6,300	266
State Public School	Coldwater	John B. Montgomery	1874	5	578	578	......	......	2,300	......
Totals			......	123	2,657	2,303	142	4,387	19,268	691
INCORPORATED UNDER ACT 39, SESSION LAWS OF 1855, OR CHAPTER 218 OF COMPILED LAWS.										
Denominational.										
Adrian College	Adrian	G. Roscoe Smith	1859	22	205	......	29	713	10,000	167
Albion College	Albion	Samuel Dickie	1861	26	512	486	42	1,000	21,600	450
Alma College	Alma	Thomas C. Blaisdell	1887	26	245	238	18	192	24,391	340
Emmanuel Missionary College	Berrien Springs	Otto J. Graf	1910	22	254	92	23	81	3,200	238

Hillsdale College	Hillsdale	Joseph W. Mauck	1855	24	499	361	46	1,220	19,087	1,087
Hope College	Holland	Rev. A. Vennema	1866	19	413	264	24	470	17,000	225
Kalamazoo College	Kalamazoo	Herbert Lee Stetson	1855	11	187	160	28	588	14,600	100
Olivet College	Olivet	Ellsworth G. Lancaster	1859	24	249	230	41	850	33,283	283
University of Detroit	Detroit	William F. Dooley	1911	30	400	400	12	314	14,500	500
Totals				204	2,964	2,231	263	5,428	157,661	3,390
Academies and Seminaries:										
Academy of the Ladies of the Loretto	Sault Ste. Marie	M. M. Alphonsus	1898	9	162	157	10	52	1,345	30
Academy of the Sacred Heart	Grosse Pointe Farms	Madam Adelaide Smith	1885	15	51	49	2	71	3,033	100
Academy of the Sacred Heart	Detroit	Madame L. Gerardin	1850	13	105	105			3,240	113
Bensonia Academy										
Bliss Alger College	Detroit	F. R. Alger		8	400		250	2,000		
The Liggett School	Detroit	Ella M. Liggett	1882	40	398	378	18	481	4,300	150
Detroit University School	Detroit	Frederick Le Roy Bliss	1900	19	205	187	19	346	2,310	15
Holy Rosary Academy	Bay City	Sister Superior	1905	9	30	30	4	15	1,100	50
Nazareth Academy	Nazareth	Sister M. Gertrude Keenan	1897	27	207	142	4	33	7,800	300
St. Mary's Academy	Monroe	Mother M. Michtildis	1890	34	324	261	43	310	11,180	423
St. Mary's School	Sault Ste. Marie	Sister St. Maurus	1898	8	425	425	20		500	
Seminary of the Felician Sisters	Detroit	Magdalene Bronek	1882	5	45	27	11	331	2,183	10
Spring Arbor Seminary	Spring Arbor	Henry S. Stewart	1873	8	140	117	15	250		
Theological School and Calvin College	Grand Rapids	Albert J. Rooks	1876	12	226	172	19	130		
Ursuline Academy	St. Ignace	Mother M. Angela	1899	10	170	167	4	30	1,000	
Totals				217	2,888	2,217	419	4,049	37,991	1,191
Professional Schools:										
Detroit College of Law	Detroit	Philip T. Van Zile	1893	23	301	223	80	843	1,800	235
Detroit College of Medicine	Detroit	Dr. Theo. A. McGraw	1885	124	175	143	38	1,423	1,800	300
Detroit Homeopathic College										
Grand Rapids Veterinary College	Grand Rapids	Colon C. Lillie	1897	12	112	53	37	400		
Sprague Correspondence School of Law	Detroit	Griffith Ogden Ellis	1890	4	507					
Totals				163	1,095	419	155	2,666	3,600	535

TABLE XXIV.—*Concluded.*

Name of institution.	Location.	Name of president, superintendent or principal.	Date of organization.	Number of instructors.	Number of students or inmates during the year.	Number of students from Michigan.	Number of graduates at last commencement.	Whole No. of graduates since founded.	Number of volumes in library.	Number of volumes added to library during the year.
Schools with Normal and Business Courses:										
Benton Harbor College	Benton Harbor	G. J. Edgcumbe	1892	14	254	232	35	575	1,230	
Cedar Lake Academy	Cedar Lake	R. U. Garrett	1899	7	97	97	8		400	300
Cleary Business College	Ypsilanti	P. R. Cleary	1891	9	463	448	84	1,534	615	15
Detroit Technical Institute										
Ferris Institute	Big Rapids	W. N. Ferris	1894	27	2,301	2,190	195	1,795	2,650	50
International Business College										
Jackson Business College	Jackson	B. J. Campbell	1901	4	134	133	42			
Ludington Business College										
Michigan Business and Normal College	Battle Creek	C. J. Argubright	1896	4	277	268	82		523	23
Parson's Business College	Kalamazoo	William F. Parsons		7	198	193	38			
Totals				72	3,724	3,561	484	3,904	5,418	388

TABLE XXV.

Financial statistics of educational institutions compiled from reports of officers for the academic year 1911-1912.

Name of institution.	Annual cost of tuition per student.	Average cost of board per week.	Total average annual cost of each student.	Total average annual cost of each student to the State.	Estimated value of grounds, buildings, library, apparatus, etc.	Amount of productive funds.	Income from productive funds.	Amount of legislative appropriation for 1912.	Receipts from tuition fees during the year.	Receipts from all other sources.	Current expenses for the year.	Expenses for permanent improvements.	Liabilities.
ESTABLISHED BY ACTS OF LEGISLATURE.													
Educational:													
Central Michigan Normal School	$27 00	$2 75	$150 00	$75 00	$300,000 00			$80,000 00	$3,993 00	$1,060 51	$85,041 19		
Michigan Agricultural College	15 00	2 85	300 00		1,394,119 72	$989,603 86	$70,265 32		2,300 00	390,842 15	400,288 57	$25,000 00	
Michigan College of Mines	25 00 150 00	5 00	550 00 700 00	349 46	754,958 51			65,000 00	23,757 00	6,913 66	95,670 66		
Michigan State Normal College	9 00	2 75	175 00	53 58	511,500 00		4,163 16	165,000 00	18,543 15	354 44	187,825 25	11,500 00	
Northern State Normal School	9 00	4 25	200 00	91 60	210,496 20			55,000 00	4,109 00	71 03	51,980 03		
University of Michigan	61 93	3 50	500 00	140 76	4,152,289 74	900,524 38	56,002 96	867,000 00	345,724 28	213,810 05	1,319,648 85	100,373 04	
Western State Normal School	12 00	3 50	180 00	56 69	300,000 00			80,000 00	6,441 00		86,440 50	5,000 00	
Charitable:													
Industrial Home for Girls		1 02		137 07	260,000 00			72,000 00		4,249 28	73,951 93	3,129 58	
Industrial School for Boys				126 78	430,000 00			98,000 00		8,888 83	108,710 77		
Michigan School for the Blind				293 00	182,991 15			45.855 00		1,500 00	48,811 68		
Michigan School for the Deaf	64 81	1 73		284 29	399,139 13			85,250 00		13,354 79	98,354 79	3,230 83	
State Public School		1 24		30 00	281,645 55	2,500 00	100 00	45,520 00		5,683 52	45,520 00		
INCORPORATED UNDER ACT 39, SESSION LAWS OF 1855, OR CHAPTER 218 OF COMPILED LAWS.													
Denominational:													
Adrian College	70 00	4 00	215 00		225,000 00	50,000 00	2,500 00		8,960 00	24,159 18	33,134 78	1,000 00	
Albion College	40 00	3 50	225 00		275,000 00	350,000 00	16,500 00		27,351 90	15,401 81	59,146 16		
Alma College	30 00	3 00	222 00		185,145 93	402,611 11	22,254 70		5,602 96	5,858 36	31,186 12	3,362 12	
Emmanual Missionary College	36 00	1 75	150 00		109,183 11				13,257 06	45,621 32	55,616 02	2,028 84	$47,859 25
Hillsdale College	28 50	3 00	400 00		175,732 22	286,021 42	14,366 90		5.650 00	6,095 33	26,112 23	1,453 77	
Hope College	24 00	3 00	250 00		235,000 00	313,938 74	12,000 00		4,143 00	15,272 00	32,161 00		43,989 30
Kalamazoo	30 00	3 00	157 00		135,000 00	532,782 69	22,962 54		5,182 50	19,345 71	35,915 75		
Olivet College	75 00	2 50	225 00		500,000 00	141,000 00	7,000 00		17,368 90	23,566 00	40,934 92		37,986 55
University of Detroit	60 00				300,000 00	100,000 00	5,000 00		13,635 25	49,854 94	25,073 14	3,000 00	11,191 00

TABLE XXV.—*Concluded.*

Name of institution.	Annual cost of tuition per student.	Average cost of board per week.	Total average annual cost to each student.	Total average annual cost of each student to the State.	Estimated value of grounds, buildings, library, apparatus, etc.	Amount of productive funds.	Income from productive funds.	Amount of legislative appropriation for 1912.	Receipts from tuition fees during the year.	Receipts from all other sources.	Current expenses for the year.	Expenses for permanent improvements.	Liabilities.
INCORPORATED UNDER ACT 39, SESSION LAWS OF 1855, OR CHAPTER 218 OF COMPILED LAWS.													
Academies and Seminaries:													
Academy of the Ladies of the Loretto													
Academy of the Sacred Heart			$300 00										
Academy of the Sacred Heart	$100 00								$5,773 00			$1,545 00	
Bensonia Academy													
Bliss Alger College	100 00	$4 50							15,000 00				
The Liggett School	200 00	10 00			$95,000 00				65,000 00			5,000 00	
Detroit University School	80 00				165,815 25				46,593 40	$2,507 91	$57,243 25		$108,884 18
Holy Rosary Academy	40 00	4 00	200 00		70,000 00				13,000 00	3,000 00	6,000 00	1,000 00	
Nazareth Academy	150 00	3 75											
St. Mary's Academy	40 00	4 00	200 00		250,000 00				23,218 26	61,628 23	63,626 77	10,000 00	68,802 30
St. Mary's School													
Seminary of the Felician Sisters					100,000 00				450 00			200 00	
Spring Arbor Seminary	28 00	2 90	115 00		25,000 00				4,600 00		7,000 00	1,000 00	
Theological School and Calvin College	26 00	4 50	250 00		50,000 00	$40,000 00	$2,200 00		4,452 00	16,200 42	19,503 42	550 00	
Ursuline Academy	5 00	3 00	120 00		15,000 00				500 00	2,500 00	3,200 00	100 00	300 00
Professional Schools:													
Detroit College of Law	75 00								17,865 79	694 22	18,444 48		
Detroit College of Medicine	115 00				150,000 00	70,000 00	70,000 00		18,746 00	25,360 49	19,720 20		32,000 00
Detroit Homeopathic College													
Grand Rapids Veterinary College	100 00	3 00	350 00		30,000 00				11,500 00		8,000 00	400 00	13,000 00
Sprague Correspondence School of Law	60 00		60 00						26,765 90		26,056 38		
Schools with Normal and Business Courses:													
Benton Harbor College	12 50	2 50	158 00		40,000 00				6,420 00		3,240 00	240 00	540 00
Cedar Lake Academy	36 00	1 50	126 00		19,866 00				1,465 75	245 96	1,462 00	1,395 00	2,847 35
Cleary Business College	70 00	3 50			33,283 23				14,770 89	1,160 79	14,019 12	295 95	17,596 21
Detroit Technical Institute													
Ferris Institute	50 00	2 75	175 00		130,000 00				55,000 00	7,750 00	60,000 00	2,000 00	
International Business College													
Jackson Business College	105 00								3,865 00	1,025 00	4,658 20	200 00	
Ludington Business College													
Michigan Business and Normal College	100 00	3 50	268 00		6,183 00				13,604 30	1,986 01	10,189 25	110 00	3,095 72
Parson's Business College	95 00	4 00	303 00		15,000 00				5,375 35		7,479 38		22,486 97

TABLE XXVI.

Special statistics compiled from commissioners' reports.

Counties.	Parochial schools.							
	No. of schools.	No. of children enrolled.	Age of same.	Branches taught.	Character of instruction.	No. of instructors.	Regularity of attendance.	Length of time of school.
Alcona								
Alger								
Allegan	2	150	6 to 16	Christian doctrines, Bible history, grammar, spelling, reading, writing, geography, U S. history, drawing, physiology, civics, arithmetic	Good	4	70 to 80%.	9 to 10 mo.
Alpena	6	1,162	6 to 17	Common branches, bookkeeping, stenography, type-writing, civics, music	Good	24	86%	8 to 10 mo.
Antrim	1	40	5 to 16	Same as in public schools. Also religious instruction	Fair	2	Good	9 mo.
Arenac	2	40	5 to 16	Common branches, German, Bible study		2	Good	7 mo.
Baraga	1	110	6 to 16	Reading, writing, arithmetic, spelling, history, language, geography, grammar, physiology, Christian doctrine	Good	4	Excellent	10 mo.
Barry	1	12		Common branches, Bible study		1	Good	8 mo.
Bay	22	5,151				77		
Benzie								
Berrien	7	438	5 to 16	Common school subjects and church catechism	Poor to good	12	Poor to good	5 to 10 mo.
Branch	2	200	5 to 18	Common branches, catechism, Bible history		7	85%	9½ mo.
Calhoun	5	500	7 to 15	Public school branches through 8 to 11 grades	Good	15	Excellent	8 to 9 mo.
Cass	1	20	5 to 16	Common rural school course and religious instruction	Good	1		9 mo.
Charlevoix	2	200	6 to 17	Regular common school course, with 9th and 10th grade branches, music, drawing	Excellent	8	Good	9 mo.
Cheboygan	6	537	7 to 16	Common branches, music, sewing, etc	Very good	11	Good	3 to 10 mo.
Chippewa	1	400	5 to 20	Common school branches, eight grades		8	Good	10 mo.
Clare								
Clinton	3	350	6 to 15	Common branches and Bible	Good	6	Regular	5 to 10 mo.
Crawford								
Delta	2	750	5 to 18	Common branches in one, regular high school course in the other	Good	14	Good	9 to 10 mo.
Dickinson								
Eaton								
Emmet								
Genesee	1	120		Common branches through eight grades		4	Good	10 mo.
Gladwin								
Gogebic	2	725	7 to 20	Branches of grammar grades and high school, with religious instruction		15	Good	10 mo.
Grand Traverse	3	493	5 to 18	Common school and high school branches, with religious instruction	Good	12	Good	9 mo.
Gratiot	2	28	6 to 17	Common branches and Bible		2	Good	Full year.
Hillsdale						65	Excellent	10 mo.

TABLE XXVI.—*Continued.*

Counties.	Parochial schools.							
	No. of schools.	No. of children enrolled.	Age of same.	Branches taught.	Character of instruction.	No. of instructors.	Regularity of attendance.	Length of time of school.
Houghton	12	3,041	6 to 17	Same as in public schools		65	Excellent	10 mo.
Huron	7	400		Common branches	Fair	14	Fair	9 to 10 mo.
Ingham	4	550	5 to 9	Common branches and high school subjects		14	Good	9½ mo.
Ionia	4	480	6 to 18	Catechism, U. S. history, civics, reading, writing, arithmetic, English, spelling, algebra, geometry, physics, German, Latin, general history, music	Very good	17	Good	7 to 10 mo.
Iosco	2	150	7 to 14	Reading, writing, geography, grammar, U. S. history, civics, German, English, music, spelling	Fair	2	Very good	9 mo.
Iron								
Isabella	2	300	5 to 22	Common school subjects, German and catechism	Very good	13	Fair to good	10 mo.
Jackson	3	400		English and German in two, English and catechism in the other	Fine	17	Good	3 to 10 mo.
Kalamazoo	4	1,175	6 to 16	Common school branches	Good	50	Good	9 mo.
Kalkaska								
Kent	28	6,469	5 to 20	Common branches; two have full high school courses	Good	179	Fair	10 to 11 mo.
Keweenaw								
Lake								
Lapeer								
Leelanau	2	94	5 to 20	Common school branches, with some high school work		5	Good	9 mo.
Lenawee	6	338	6 to 14	Common English branches up to and including 8th grade	Fair	12	Good	6 to 10 mo.
Livingston								
Luce								
Mackinac	1	165	5 to 19	English, history, arithmetic, geography, botany, physics, algebra, writing, spelling, civics, music, stenography, typewriting, German, French, Latin, bookkeeping, ethics.	Good	9	Fair	10 mo.
Macomb	11	900	5 to 16	Common school branches	Good	21	Good	5 to 10 mo.
Manistee	9	1,323	6 to 16	Common school branches, catechism and religious instruction		27	Very good	8 to 10 mo.
Marquette	2	1,165	6 to 18	Reading, writing, arithmetic, geography, U. S. history, grammar, civics, spelling, botany, geometry, literature, Latin, English, Greek and Roman history, algebra, and commercial branches		26	Good	10 mo.
Mason	4	581	5 to 18	Common school and high school branches	Fair	10	Good	9½ mo.
Mecosta	4	225	5 to 18	Reading, arithmetic, grammar, U. S. history, physiology, civics, music, drawing, spelling, writing, science, Christian doctrine		16	Good	10 mo.
Menominee	3	500	5 to 20	English branches to eight grades		12	Good	9 mo.

Midland								
Missaukee	1	64	6 to 19	Common school branches		2	Good	9 mo.
Monroe	13	487	5 to 16	Same as public school with church history and catechism		22	Good	6 to 9 mo.
Montcalm	3	195	5 to 20	Common school branches		9	Good	7 to 9 mo.
Montmorency	1	40	5 to 18	Common school branches and German	Religious	1	Good	5 mo.
Muskegon	5	585	6 to 16	Common branches through eight grades. Two schools give high school courses, with Latin, German and French	Good	29	Regular	10 mo.
Newaygo								
Oakland	1	300	7 to 20	English branches including high school course with Latin, music and drawing		13		10 mo.
Oceana	2	150	8 to 20	Public school subjects with Bible history and German		4		8 mo.
Ogemaw								
Ontonagon								
Osceola	1	59	6 to 15	Common English branches, Bible, German and catechism		1	Good	10½ mo.
Oscoda								
Otsego	1	140	6 to 14	Common school subjects, composition, music, drawing, catechism	Good	3	Fair	10 mo.
Ottawa	5	741	5 to 16	Arithmetic, history, geography, grammar, nature study, drawing, reading, writing, spelling, Bible study, Holland		19	95%	8 to 10 mo.
Presque Isle	6	325	8 to 15	Common English branches with German and Polish		10	Very regular	3 to 10 mo.
Roscommon								
Saginaw	16	1,622		Common school branches to 7 grades with German and catechism. Three teach the English branches through 12 grades		51	Very good	8 to 10 mo.
St. Clair	14	750	5 to 18	Public school subjects, grades one to twelve		20		5 to 10 mo.
St. Joseph	2	18		Regular public school subjects with religious instruction	Good	2	Good	9 mo.
Sanilac	3	35	12 to 15	Common school subjects in lower grades with catechism	Good	2	Good	6 mo.
Schoolcraft	1	253	5 to 16	Common school branches through eight grades, with church history and religious instruction	Good	4	Good	10 mo.
Shiawassee	1	200	6 to 17	Common English branches and church work		2	Excellent	10 mo.
Tuscola	8	400	6 to 14	Common school branches with religious instruction		9	Fair	7 mo.
Van Buren	2	27	6 to 18	English branches, German, catechism, Bible	Fair	2		
Washtenaw	15	599		Public school branches through eight grades. One school has full high school course				
Wayne	79	27,436	5 to 14	Common branches, church doctrine, church history, catechism		614		8 to 10 mo.
Wexford	2	175	5 to 18	Common branches and Bible		5	Good	9 mo.

TABLE XXVI.—*Continued.*

Counties.	Commercial Schools.						
	No. of schools.	No. of students.	Branches taught.	Character of instruction.	No. of instructors.	Length of time of school.	Name and location of each school.
Alpena	1	66	English, bookkeeping and allied branches, stenography, typewriting, banking, accounting, U. S. history, general history, business practice, writing, etc.	Largely individual	4	10 mo.	Alpena Business College, Alpena.
Chippewa	1	200	Commercial branches	Fair	4	12 mo.	Soo Business College, Sault Ste. Marie.
Delta	1	20	Commercial branches, stenography	Good	2	12 mo.	Gardner's Business College, Escanaba.
Dickinson	1	20	Commercial branches, bookkeeping, stenography, typewriting	Excellent	2	12 mo.	Actual Business College, Iron Mountain.
Genesee	2	275	Commercial branches		9	8 mo.	Flint Business College, Flint Business University, Flint
Gd. Traverse	1	150	Common school subjects, English, commercial branches	Fair	3	12 mo.	Needham Business College, Traverse City.
Jackson	1	80	Commercial branches	Good	5	12 mo.	Jackson Business University, Jackson.
Kent	3	600	Commercial branches, short hand, typewriting	Very good	16	12 mo.	Valley City Commercial College McLaughlin's Business College Churche's Commercial School Grand Rapids.
Lenawee	1	75	English, bookkeeping, stenography, typewriting	Good	3	9 mo.	Brown's Business University, Adrian.
Manistee	1	60	Bookkeeping, penmanship, arithmetic, spelling English, short hand, typewriting		2	10 mo.	Manistee Business College, Manistee.
Marquette	2	120	Commercial branches	Individual	4	12 mo.	Marquette Business College, Marquette. Ishpeming Business College, Ishpeming.
Mason	1	50	Commercial branches and stenography	Good	2	10 mo.	Ludington Business College, Ludington.
Monroe	1	35	Common branches, short hand, typewriting, bookkeeping		2	8 mo.	Monroe Business University, Monroe.
Muskegon	1		Commercial branches, English		4	12 mo.	Muskegon Business College, Muskegon.
Oakland	1	120	Commercial branches, English	Excellent	3	10 mo.	Pontiac Business College, Pontiac.
St. Clair	1	175	Common branches, commercial law		3	10 mo.	Port Huron Business University, Port Huron.
Shiawassee	1	65	Commercial branches		2	10 mo.	Owosso Business College, Owosso.

TABLE XXVI.—*Concluded.*

Counties.	No. of schools.	No. of students.	Private schools.	Character of instruction.	No. of instructors.	Length of time of school.	Name and location of each school.
Alger	1	8	Practical and theoretical forestry	Excellent	2	12 mo.	Wyman's School of the Woods, Munising.
Benzie	1	60	English, language, science, music		6	9 mo.	Benzonia Academy, Benzonia.
Berrien	2	475	High school and college courses	Good	38	9 mo.	Benton Harbor College, Benton Harbor. Emmanual Missionary College, Berrien Springs.
Chippewa	1	140	High school branches		6		Loretto Academy, Sault Ste. Marie.
Delta	1	14		Fair	1	7½ mo.	
Genesee	1	30	Common school branches	Good	1		Lillian Hiccox, Flint.
Kent	2	100	All branches preparatory for college	Good	12	10 mo.	Charlotte Moffitt; Eastman, Grand Rapids.
Muskegon	1	80	High school branches with English and music	Good	14	10 mo.	Ursuline Academy, Muskegon.
Oakland	3					10 mo.	Polish Seminary, Orchard Lake. Adelphian Academy, Holly. D'Arcambal Home, Farmington.

TABLE XXVII.

Special report of day schools for the deaf for the school year 1911-1912.

Location.	Number of teachers employed.	Number of pupils enrolled.	Total days' attandance.	Average daily attendance.	Actual cost of school.
Totals	29	198	29,883	167	$24,961 25
Bay City	1	7	1,310	7	$1,095 00
Calumet	3	14	2,467	14	2,055 00
Detroit	11	76	10,833	60	9,027 50
Grand Rapids	5	28	4,558	25	3,798 75
Houghton	1	6	870	5	720 00
Iron Mountain	1	5	744	4	620 00
Ironwood	1	10	1,396	8	1,164 00
Kalamazoo	1	9	871	5	726 00
*Lake Linden					
Manistee	1	11	1,929	11	1,605 00
Marquette	1	7	1,356	7	1,125 00
Saginaw	1	10	1,353	8	1,125 00
Sault Ste. Marie	1	9	1,369	8	1,210 00
Traverse City	1	6	827	5	690 00

*Discontinued.

TABLE XXVIII.

Special report of county normal training classes for the school year 1911-1912.

Counties.	Number of teachers.	Amount paid teachers.	Number of graduates.	Average age of graduates.	Average number hours of practice teaching by graduates.
Totals	66	$47,730 06	497	19	54
Allegan	2	$1,500 00	18	19	55
Antrim	2	1,300 00	22	19	50
Arenac	2	1,400 00	18	19	50
Barry	2	1,400 00	24	19	50
Benzie	2	1,775 00	10	20	65
Berrien	2	1,400 00	11	19	50
Branch	2	1,400 00	12	20	40
Calhoun	2	1,200 00	17	19	55
Cass	......	......	......	......	......
Charlevoix	2	1,790 00	10	20	70
Cheboygan	......	......	......	......	......
Clinton	2	1,650 00	19	18	85
Eaton	2	1,200 00	12	18	50
Genesee	2	1,800 00	14	19	55
Gratiot	......	......	......	......	......
Ingham	2	1,500 00	20	19	50
Ionia	2	1,600 00	23	20	50
Iosco	2	1,220 00	10	19	50
Kalkaska	2	1,300 00	15	18	55
Lapeer	......	......	......	......	......
Lenawee	2	1,500 00	14	19	50
Macomb	2	1,440 00	11	18	55
Manistee	2	1,550 00	16	19	52
Mason	2	1,550 00	11	20	55
Mecosta	2	1,950 00	20	20	50
Menominee	2	1,000 00	17	20	70
Midland	2	1,500 03	14	18	55
Missaukee	2	1.500 00	16	20	35
Montcalm	2	1,425 00	13	20	50
Montmorency	......	......	......	......	......
Muskegon	2	1,650 00	15	20	50
Newaygo	2	1,735 00	16	20	50
Oakland	......	......	......	......	......
Oceana	2	1,750 03	14	19	55
Osceola	......	......	......	......	......
Ottawa	2	1,355 00	10	19	55
Saginaw	2	1,225 00	15	19	50
Sanilac	......	......	......	......	......
Shiawassee	......	......	......	......	......
St. Clair	......	......	......	......	......
Tuscola	2	1,500 00	10	20	50
Van Buren	2	2,400 00	8	20	60
Wexford	2	1,450 00	22	20	60

TABLE XXIX.

Summary of census of children blind or with defective vision under Act 118, 1907.

Counties.	Number of children blind or with defective vision.		
	Rural and village districts.	City districts.	Total.
Totals	233	81	314
Alcona			
Alger			
Allegan	7		7
Alpena			
Antrim	3		3
Arenac			
Baraga			
Barry	5		5
Bay	7	1	8
Benzie	1		1
Berrien	3	3	6
Branch	4	1	5
Calhoun	1	1	2
Cass	3		3
Charlevoix	5		5
Cheboygan	10	2	12
Chippewa	2	6	8
Clare			
Clinton	2	1	3
Crawford	1		1
Delta			
Dickinson		1	1
Eaton	6		6
Emmet	1		1
Genesee	3		3
Gladwin	3		3
Gogebic		1	1
Grand Traverse	4	2	6
Gratiot	2		2
Hillsdale	2		2
Houghton	13	1	14
Huron	2		2
Ingham	4	12	16
Ionia	3		3
Iosco			
Iron	1		1
Isabella	4		4
Jackson	1		1
Kalamazoo	6	1	7
Kalkaska			
Kent	7		7
Keweenaw			
Lake	1		1
Lapeer	2		2
Leelanau	2		2
Lenawee	5		5
Livingston	3		3
Luce			
Mackinac			
Macomb	3	2	5
Manistee	7		7
Marquette	5	4	9
Mason	3		3
Mecosta	2		2
Menominee	1		1

TABLE XXIX.—*Concluded.*

Counties.	Number of children blind or with defective vision.		
	Rural and village districts.	City districts.	Total.
Midland	2		2
Missaukee			
Monroe	5		5
Montcalm	5	1	6
Montmorency			
Muskegon	2		2
Newaygo	10		10
Oakland	4	1	5
Oceana	9		9
Ogemaw	2		2
Ontonagon			
Osceola	2		2
Oscoda			
Otsego	2		2
Ottawa	7	4	11
Presque Isle	2	1	3
Roscommon			
Saginaw	3	4	7
St. Clair	3		3
St. Joseph		3	3
Sanilac	2		2
Schoolcraft		1	1
Shiawassee	2	2	4
Tuscola	3		3
Van Buren	4		4
Washtenaw	5		5
Wayne	7	22	29
Wexford	2	3	5

TABLE XXX.

Special report of the rural high schools for the school year 1911-1912.

Location.	County.	Date of organization.	Number of teachers.	Amount paid teachers.	Number enrolled.		Whole number of volumes in library.
					Male.	Female.	
Totals			2	$1,170 00	17	18	10
Mundy township	Genesee	1907	1	$540 00	6	8	10
Excelsior township	Kalkaska	1907	1	630 00	11	10	

TABLE XXXI.

Financial statistics of rural high schools for the school year 1911-1912.

Location.	County.	Annual cost per student.	Estimated value of equipment.	Annual appropriation by township.	Income from other sources.	Current expenses for the year.	Estimated expenses for the ensuing year.	Estimated value of buildings.
Totals............	....	$84 73	$625 00	$670 00	....	$1,477 16	$1,750 00	$650 00
Mundy township........	Genesee......	$48 37	$25 00	....	....	$677 16	$750 00	$650 00
Excelsior township......	Kalkaska.....	36 36	600 00	$670 00	....	800 00	1,000 00	....

TABLE XXXII.

Special report of the County Agricultural Schools for the school year 1911-1912.

Location.	County.	Date of organization.	Number of teachers.	Amount paid teachers.	Number enrolled.		Number of graduates for current year.	Whole number of volumes in library.
					Male.	Female.		
Totals..................	....	......	8	$7,400 00	31	33	11	416
McCarron....................	Chippewa....................	1912	3	$2,600 00	10	4	......	110
Menominee....................	Menominee....................	1907	5	4,800 00	21	29	11	306

TABLE XXXIII.

Financial statistics of the County Agricultural Schools for the school year 1911-1912.

Location.	County.	Annual cost to student.	Estimated value of equipment.	Amount annual appropriation.	Current expenses for the year.	Estimated expenses for the ensuing year.	Estimated value of buildings.
Totals............	....	$204 76	$7,252 60	$38,767 91	$12,004 60	$18,000 00	$52,181 17
McCarron..............	Chippewa..............	$80 00	$2,137 25	$1,200 00	$4,465 90	$10,000 00	$19,728 61
Menominee.....	Menominee.............	124 76	5,115 35	37,567 91	7,538 70	8,000 00	32,452 56

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